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### After the Negotiations: Understanding Multilateral Nuclear Arms Control

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## Abstract

### After the Negotiations: Understanding Multilateral Nuclear Arms Control

Stephen Herzog

2021

Why do advanced nuclear states agree to legally forswear nuclear weapons? Many international relations studies have explored why states seek to develop nuclear weapons. Yet, the literature does not address why states would participate in multilateral nuclear arms control treaties that tie their hands against doing so. This gap in the existing scholarship matters because nuclear weapons are one of few tools that can effectively guarantee a state's sovereignty and national survival.

My dissertation disaggregates the process of entering multilateral nuclear arms control treaties into two phases. Previous studies have discussed either treaty signature or ratification, overlooking the often lengthy delays between them. However, motivations for signing and ratifying are often distinct because these actions carry different legal weights and political consequences. I discover that signing a treaty can reflect a variety of "type signaling" motivations about a state's views on the distribution of power the agreement reifies. Indeed, signatories signal to the international community their advocacy for the treaty or subordinate status to a powerful patron that compels them to sign. Non-signatories signal a desire for enhanced status or interest in considering the nuclear option. But ultimately, states will only engage in legal "commitment signaling" not to pursue nuclear weapons through ratification if their security environment permits it.

Accession to a treaty once it has already entered into force—and signature is no longer possible—requires a “joint signal” pertaining to both necessary conditions.

To demonstrate the applicability of my theory, I investigate four case studies of states with advanced civilian nuclear energy capabilities or weapons proliferation aspirations. I examine the causal pathways that led Brazil, Egypt, Japan, and Romania to embrace the Nuclear Nonproliferation Treaty (NPT) of 1968 and the Comprehensive Nuclear-Test-Ban-Treaty (CTBT) of 1996. These states acted in accordance with the two-step process of type and commitment signaling described in my theory despite varying regime types, alliance commitments, levels of industrialization, and more. The case studies shed new light on international nuclear politics by drawing on diverse sources, including archival documents and original elite interviews I conducted with decision-makers.

Taken together, this dissertation makes three primary contributions to the scholarly and policy-making domains. First, it offers a new process-based theory explaining an understudied phenomenon in international security. Second, it provides evidence and insights that challenge dominant narratives surrounding historical cases of legal nuclear forbearance. Third, it suggests novel approaches to understanding incentive structures behind differing levels of commitment to multilateral nuclear arms control.

After the Negotiations:  
Understanding Multilateral Nuclear Arms Control

A Dissertation  
Presented to the Faculty of the Graduate School  
of  
Yale University  
in Candidacy for the Degree of  
Doctor of Philosophy

by  
Stephen Herzog

Dissertation Director: Nuno P. Monteiro

June 2021

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## **Acronyms and Abbreviations**

ABACC	Brazilian–Argentine Agency for Accounting and Control of Nuclear Materials
ABM	Anti-ballistic missile
ACDA	Arms Control and Disarmament Agency, of the United States
AEA	Atomic Energy Authority, of Egypt
AEC	Atomic Energy Commission, of the United States
CANDU	Canada deuterium uranium reactor
CD	Conference on Disarmament
CEBAC	Brazilian–Argentine Executive Commission for Coordination
CIA	Central Intelligence Agency, of the United States
COMECON	Council for Mutual Economic Assistance
CNEA	National Atomic Energy Commission, of Argentina
CNEN	National Nuclear Energy Commission, of Brazil
CNPq	National Council for Scientific and Technological Development, of Brazil
CPDOC	Center for Research and Documentation of Contemporary History of Brazil, of the Getúlio Vargas Foundation
CPI	Parliamentary Commission of Inquiry, of Brazil
CSEN	State Committee for Nuclear Energy, of Romania
CSN	National Security Council, of Brazil
CTBT	Comprehensive Nuclear-Test-Ban Treaty
CTBTO	Comprehensive Nuclear-Test-Ban Treaty Organization
EBB	Electronic Briefing Book, of the National Security Archive
ENDC	Eighteen-Nation Committee on Disarmament
ENR	Enrichment and reprocessing
EURATOM	European Atomic Energy Community
FGV	Getúlio Vargas Foundation
FMCT	Fissile Material Cut-Off Treaty
FOIA	Freedom of Information Act, of the United States
FRG	Federal Republic of Germany, commonly known as West Germany
FRUS	Foreign Relations of the United States
GDR	German Democratic Republic, commonly known as East Germany
HEU	Highly-enriched uranium
HWR	Heavy water reactor
IAEA	International Atomic Energy Agency
ICBM	Intercontinental ballistic missile

IMS	International Monitoring System, of the Comprehensive Nuclear-Test-Ban Treaty
INF	Intermediate-range nuclear forces
IPEN	Nuclear and Energy Research Institute, of the University of São Paulo
JAEC	Japan Atomic Energy Commission
JAERI	Japan Atomic Energy Research Institute
JCS	Joint Chiefs of Staff, of the United States
LDP	Liberal Democratic Party, of Japan
LEU	Low-enriched uranium
LTBT	Limited Test-Ban Treaty, also known as the Partial Test-Ban Treaty
LWR	Light water reactor
MENWFZ	Middle East Nuclear-Weapon-Free Zone
MLF	Multilateral Force
MOFA	Ministry of Foreign Affairs, of Japan
MTCR	Missile Technology Control Regime
NAC	New Agenda Coalition
NATO	North Atlantic Treaty Organization
NNPA	Nuclear Nonproliferation Act, of the United States
NNWS	Non-Nuclear Weapon State
NPT	Treaty on the Non-Proliferation of Nuclear Weapons, commonly known as the Nuclear Nonproliferation Treaty
NSA	National Security Archive
NSC	National Security Council, of the United States
NSG	Nuclear Suppliers Group
NTM	National technical means
NWFZ	Nuclear-weapon-free zone
NWS	Nuclear-Weapon State
OAPEC	Organization of Arab Petroleum Exporting Countries
OAS	Organization of American States
OSI	On-site inspection
P5	Five Permanent Members of the United Nations Security Council
PATN	Autonomous Program of Nuclear Technology, of Brazil, commonly known as the parallel program
PCC	Political Consultative Committee, of the Warsaw Pact
PCR	Romanian Communist Party
PHP	Parallel History Project on Cooperative Security
PNE	Peaceful nuclear explosion

PNET	Peaceful Nuclear Explosions Treaty
PRC	People's Republic of China, commonly known as China
PTBT	Partial Test-Ban Treaty, also known as the Limited Test-Ban Treaty
Pu-239	Fissile isotope Plutonium-239
RPR	Romanian People's Republic
RSR	Socialist Republic of Romania
SALT	Strategic Arms Limitation Talks
SCAP	Supreme Commander for the Allied Powers, of occupied Japan
SDI	Strategic Defense Initiative, of the United States, commonly known as "Star Wars"
START	Strategic Arms Reduction Treaty
TNW	Tactical nuclear weapon
TPNW	Treaty on the Prohibition of Nuclear Weapons, commonly known as the Nuclear Ban Treaty
TRIGA	Training, Research, Isotopes, General Atomics reactor
TTBT	Threshold Test-Ban Treaty
U-235	Fissile isotope Uranium-235
U-238	Non-fissile isotope Uranium-238
UAR	United Arab Republic
UF6	Uranium hexafluoride
UN	United Nations
UNAEC	United Nations Atomic Energy Agency Commission
UNGA	United Nations General Assembly
UNSC	United Nations Security Council
USSR	Union of Soviet Socialist Republics, commonly known as the Soviet Union



## **Chapter 1 – Introduction**

This dissertation focuses on the phenomenon of legally forswearing nuclear weapons. States do so by joining multilateral nuclear arms control treaties. These agreements seek to eliminate the weapons themselves or prohibit other vital elements of proliferation like nuclear test explosions or fissile material production. Despite vast refinement in the study of nuclear proliferation in recent years, multilateral arms control remains both understudied and undertheorized. The scholarly literature in international relations now has wide-ranging insights into reasons why states seek to build the bomb. Yet, it lacks compelling explanations for why capable and interested states might tie their hands against doing so. Consequently, my project addresses two central and related research questions:

1. Why do advanced nuclear states agree to legally forswear nuclear weapons?
2. Why do such states sign and ratify multilateral nuclear arms control treaties?

The introduction to the dissertation moves forward in five sections. First, I survey the broad base of scholarship in nuclear politics to identify a key substantive gap in the literature. Second, I lay out relevant questions and puzzles for investigation in detail. Third, I discuss shortcomings of existing explanations. Fourth, I briefly summarize my argument, expressed in the form of a process-based theory of state entry into multilateral nuclear arms control treaties. Finally, I offer a fifth section highlighting my analytical approach, previewing my comparative historical case studies, and providing a roadmap for the dissertation.

### The Multilateral Nuclear Arms Control Gap

Since the dawn of the U.S.–Soviet nuclear arms race, scholars have played an integral role in nuclear politics. It is nearly impossible to chronicle nuclear strategy and deterrence during the Cold War without referencing influential theoretical works. Well-known early nuclear scholars include Bernard Brodie (1946a, 1946b, 1959, 1966), Herman Kahn (1960, 1962, 1965), Henry Kissinger (1957), Thomas Schelling (1960, 1966), and Albert Wohlstetter (1958).

Nuclear arms control and proliferation arose as concerns during the Cold War. Fears of nuclear instability and escalation led to policy desires for arms control, culminating in such initiatives as the Limited Test-Ban Treaty (LTBT), Strategic Arms Limitation Talks (SALT I and II), and Anti-Ballistic Missile (ABM) Treaty. These agreements greatly benefited from academic scholarship on the objectives, design, and implementation of arms control (Bull 1961, 1976; Schelling and Halperin 1961; Brodie 1976; Adelman 1984; Schelling 1985). Naturally, the arms control literature of the era made assumptions of global bipolarity. Yet, the rising importance of the Nuclear Nonproliferation Treaty (NPT) coincided with new studies attempting to understand why states that were not great powers sought the bomb (Quester 1973, 1981; Epstein 1977; De Mesquita and Riker 1982; Meyer 1984). These studies identified security considerations as the predominant driver of both bilateral arms control and nuclearization. Missing were state motivations for participating in multilateral nuclear arms control treaties like the NPT.

Bilateral arms control remained alive and well in the academy in the early 1990s as the Strategic Arms Reduction Treaty (START) entered into force.

Strains between the North Atlantic Treaty Organization (NATO) and Russia led Betts (1992) to advocate arms control measures to de-escalate disputes as the Kremlin faced the task of state-building. Jervis (1993) agreed but argued that arms control was insufficient to ensure peace and was but one tool among many for managing tensions. Scholars also placed some initial emphasis on multilateral agreements. Walker (1992) pointed to legacy Soviet nuclear deployments in Belarus, Kazakhstan, and Ukraine as an imperative to design treaties inclusive of rising nuclear powers. But by the mid-1990s, the scholarly emphasis on arms control had faded as proliferation became the more pressing topic of interest.

The end of the Cold War saw the emergence of two intersecting sets of proliferation threats: diversion from the former Soviet stockpile of weapons and fissile materials, and aspiring proliferators. There was a growing need for academic analysis of trends in expertise proliferation of unemployed Soviet nuclear scientists (Nye 1992; Potter 1992; Moody 1996) and measures to protect against trafficking of sensitive materials and technologies throughout the former USSR (Zagorski 1992; Ewell 1998). These trends were particularly concerning due to an increasing number of new countries believed to be violating the norms and obligations of the NPT: Iran, Iraq, Libya, North Korea, and Pakistan (Litwak 2000).

Indeed, U.S. unipolarity incentivized many “recalcitrant states” to consider nuclearization to insulate themselves against hegemonic pressure (Monteiro 2011/2012, 2014). Scholars began to highlight the risk of proliferation and the importance of its rigorous theorization (Mearsheimer 1990; Lavoy 1993; Ogilvie-White 1996). This concern spurred a new wave of security-oriented

literature (Frankel 1993; Reiss 1995; Thayer 1995) as well as work on domestic politics and international status (Sagan 1996/1997).

The growth of proliferation studies in the 1990s set the stage for the current era, which Walt (2010) has described as a “renaissance” in nuclear security studies. This renaissance has both methodological and thematic drivers. One major factor underlying its development is the opening of Cold War archives (Gavin 2012; Rabinowitz 2014; Gerzhoy, 2015). A second is the application of statistical (Singh and Way 2004; Jo and Gartzke 2007; Miller 2014) and formal modeling techniques to data (Coe and Vaynman 2015; Bas and Coe 2016). Another driver has its roots in post-Cold War proliferation concerns among policy-makers.<sup>1</sup> Today’s scholarship includes work on strategic interaction (Gartzke and Kroenig 2009; Monteiro and Debs 2014; Debs and Monteiro 2017) and supply-side proliferation (Kroenig 2010; Fuhrmann 2012a; Gheorghe 2019; Gibbons 2020).

While nuclear proliferation is becoming a saturated field, arms control remains mostly absent from the new wave of studies. This situation is problematic as multilateral nuclear arms control treaties become increasingly relevant. Such agreements include the Comprehensive Nuclear-Test-Ban Treaty (CTBT), Fissile Material Cut-Off Treaty (FMCT), nuclear-weapon-free zones (NWFZs), and the recent Treaty on the Prohibition of Nuclear Weapons (TPNW). Multilateral arrangements will grow in importance as the United States and Russia reduce Cold War-era stockpiles and attempt to integrate other states into the arms

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<sup>1</sup> There have also been numerous studies discussing changes in nuclear strategy and deterrence. [See, e.g.: Powell 2003; Lieber and Press 2006, 2009, 2017; Sechser and Fuhrmann 2013, 2017; Fuhrmann and Sechser 2014; Narang 2014; Talmadge 2017].

control fold. Like their bilateral cousins, multilateral treaties of this nature promote communication and shape the information environment through verification. Such treaties are notably complicated because—unlike bipolar accords—they often require non-nuclear states to commit not to pursue capabilities that could enhance their power. Put simply: for states that do not possess nuclear weapons, multilateral nuclear arms control is about *legally forswearing the bomb*.

### Questions and Puzzles

Legally forswearing nuclear weapons can be much more challenging than entering into a multilateral trade, environmental, or human rights treaty. The reason is that nuclearization may help ensure state survival against external threats (Waltz 1981; Monteiro 2014). However, a decision to remain in nuclear forbearance at any given time is not equivalent to ruling out the nuclear option with a treaty commitment.

Table 1 (p. 7) highlights the challenges entailed in entering into multilateral nuclear arms control. It displays NPT and CTBT signature and ratification/accession data for several states that had advanced civilian nuclear energy programs or nuclear weapons aspirations. These states are thus “hard cases” for multilateral nuclear arms control. After all, the NPT involves their indefinite legal commitment to remain non-nuclear.<sup>2</sup> The CTBT prohibits nuclear explosive tests, which are a vital component of developing a nuclear weapon.<sup>3</sup> Many of these states delayed signing or ratifying the agreements.

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<sup>2</sup> See: Treaty on the Non-Proliferation of Nuclear Weapons (July 1, 1968), 729 *UNTS* 161, 7 *ILM* 809.

<sup>3</sup> See: Comprehensive Nuclear-Test-Ban Treaty (September 24, 1996), 35 *ILM* 1439.

Interesting pathways to embracing or avoiding arms control also appear in Table 1. States may quickly sign and then ratify treaties. Or, they may delay either signature or ratification. Sometimes states wait to join a treaty until it has entered into force, whereby they must accede, which carries the same legal weight as ratification (Aust 2010, 2013).<sup>4</sup> At other times, they may choose to sign and not ratify. Of course, they could also decide never to sign in the first place. The result is a dizzying array of wildly varying timelines to sign and ratify multilateral nuclear arms control treaties. The patterns are not consistent across space and time, regime types, economic strength, and other common political science variables. They suggest that a more complicated phenomenon is at play.

The time-lags between signature and ratification indicate that the processes likely have different underlying motivations. But yet, the few international relations studies addressing multilateral nuclear treaties focus on either signature or ratification (Way and Sasikumar 2004; Sagan 2011; Coe and Vaynman 2015; Fuhrmann and Lupu 2016). They do not attempt to rigorously differentiate between the processes. The result is that the field views arms control as binary: States are either members of treaties, or they are not. This oversimplification obscures much of the richness of arms control discussions.

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<sup>4</sup> For example, Article IX, para. 1 of the NPT reads: "This Treaty shall be open to all States for signature. Any State which does not sign the Treaty before its entry-into-force in accordance with paragraph 3 of this Article may accede to it at any time."

**Table 1: Status of the NPT of 1968 and the CTBT of 1996 in Select States<sup>5</sup>**

State	Signs NPT	Ratifies or Accedes to NPT	Signs CTBT	Ratifies or Accedes to CTBT
Argentina	—	1995	1996	1998
Brazil	—	1998	1996	1998
Egypt	1968	1981	1996	Did not ratify
Germany	1969	1975	1996	1998
Iran	1968	1970	1996	Did not ratify
Italy	1969	1975	1996	1999
Japan	1970	1976	1996	1997
Libya	1968	1975	2001	2004
Saudi Arabia	—	1988	Did not sign	Did not ratify
Syria	1968	1969	Did not sign	Did not ratify
Turkey	1969	1980	1996	2000

Two research questions motivate this dissertation. First, and most simply: Why do advanced nuclear states agree to legally forswear nuclear weapons? Many scholars have researched why states build nuclear weapons, but I seek to understand why they commit to treaties that tie their hands against doing so. Second, per Table 1: Why do such states sign and ratify multilateral nuclear arms control treaties? The answers to these questions matter for scholars and policy-makers alike. This dissertation aims to provide a more in-depth analysis of the understudied process of multilateral nuclear arms control and disarmament. It does so by evaluating states' entry into the NPT and the CTBT, the most universal

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<sup>5</sup> Data from: United Nations Office of Disarmament Affairs, "Disarmament Treaties," updated as of March 9, 2021, <http://disarmament.un.org/treaties/>.

of these agreements.<sup>6</sup> In studying this topic, I seek to build bridges between the robust, ongoing study of nuclear proliferation and the somewhat dormant field of nuclear arms control. Additionally, a carefully researched account of multilateral arms control could help decision-makers better understand how to structure sticks and carrots approaches to encouraging legal nuclear forbearance.

### Existing Explanations

Does the study of international security need another large-scale project on nuclear politics? Given the growing number of scholars in this field, it is imperative to identify space for a notable contribution. There is, however, considerable room for new projects on nuclear arms control, particularly on multilateral treaties. As I discussed above, the literature has provided deep insights into the causes of nuclear proliferation. On the other hand, there is a paucity of systematic investigation of the opposite phenomenon. Rationales for why states choose not to develop nuclear weapons do not fully explain legal hand-tying. A technically proficient state may not have the motivation to make a drive for the bomb presently, but this does not explain why its leaders would eliminate the option for the future. There is, after all, uncertainty in the international system; threats to state survival can and do evolve (Waltz 1979; Mearsheimer 2001). Participation in multilateral nuclear arms control is, accordingly, a different dependent variable than nuclear proliferation. Given the benefits that nuclear weapons can have for state survival, this is an important puzzle both at the academic and policy levels.

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<sup>6</sup> The broad membership base of these treaties has also resulted in a plethora of available primary and secondary sources on various states' decision-making.



It would be misleading to suggest that there has been no research on multilateral nuclear arms control in the past two decades. Early work on the subject highlighted the importance of treaties and attempted to apply Cold War lessons to new regional agreements (Larsen 2002; Larsen and Wirtz 2009). Scholars began to ask: Do these treaties achieve their objectives? Thus far, all studies on this subject have analyzed it in the context of the NPT, the cornerstone of arms control, disarmament, and nonproliferation. Some scholars have examined the relationship between the NPT and nuclear forbearance (Jo and Gartzke 2007; Miller 2014, 2018) without directly attempting to identify causality. There is disagreement between those who argue that the NPT has had no independent effect on proliferation (Betts 1999; Hymans 2006; Solingen 2007) and those who contend that the treaty has created a powerful and efficacious norm (Sagan 1996/1997; Rublee 2009; Budjeryn 2015, 2016).

However, these studies primarily investigate the process of entering into the NPT as epiphenomenal to nuclear proliferation. Whether the treaty has a causal impact on nuclearization is a different question than why states opt to sign and ratify it. In fact, studies showing that states decided to forgo nuclear weapons before joining the NPT (Hymans 2006; Solingen 2007) point to one possible reason why such countries might have accepted the treaty.

There has also been some work dealing specifically with the question of entering into the NPT. Unfortunately, these studies do not break the process down into its constituent elements of signature and ratification, thereby overlooking differential motivations for decision-making and various levels of commitment to

arms control. They do, however, offer useful insights into some potential explanations for state decision-making. Each carries considerable limitations, but the existing scholarship provides a starting point for an in-depth look at multilateral nuclear arms control. The literature contains five different “camps” of explanations.

The first camp deals with international norms as a motivation for participating in such agreements. It is possible that norm cascades (Finnemore and Sikkink 1998) and transnational advocacy networks (Keck and Sikkink 1999) may encourage signature and ratification. In the nuclear domain, Rublee (2009) and Budjeryn (2015, 2016) look at state decision-making and conclude that international norms were responsible for many decisions to join the NPT. Similarly, Fuhrmann and Lupu (2016) argue that understanding states’ latent treaty commitment preferences on trade and human rights issues is essential to determining whether or not they will accept the NPT. Their study is thus—for the most part—a story of conformity with international institutions and norms. But the common signature–ratification time gap poses a serious challenge to these types of explanations. If norms and latent preferences inspired states at the first step of the process (signature), why would the second step (ratification) frequently take many more years to occur?

The second camp views superpower pressure as the primary determinant of why states select into multilateral nuclear arms control. Coe and Vaynman (2015) point to U.S.–Soviet collusion to draft and gain acceptance of the NPT as the reason many “hard case” states joined the regime. Gerzhoy (2015) and Gibbons (2016) describe U.S. pressure as pivotal in convincing states to

participate in treaties. Heterogeneous arms control outcomes in NATO give cause to doubt the superpower pressure explanation. For instance, Germany and Italy quickly signed on to the NPT, but their ratification debates took five to seven years—unlike Denmark and Norway. France did not sign the treaty, despite U.S. pressure, and wound up acceding years later. In Asia, U.S. allies Japan and South Korea also did not have straightforward timelines for signature and ratification. Conversely, the USSR's client states all quickly fell into line and embraced the NPT. Perhaps coercive explanations for states joining nuclear treaties apply in some cases but not in others.

The third camp offers analysis of treaty-contingent benefits. Literature in international relations (Abbott and Snidal 2000; Vreeland 2008; Hyde 2011; Hafner-Burton, Mansfield, and Pevehouse 2015) has shown that states are willing to incur sovereignty costs to signal compliance with democratic and human rights institutions. In the context of multilateral nuclear treaties, the contingent benefit is usually unrestricted access to the civilian nuclear energy market. For this reason, scholars like Paul (2000) and Gheorghe (2013a, 2014) have argued in case studies that states accepted the NPT to ensure market access. However, this explanation does not always generalize. Some states perceive international nuclear treaties as pathways to market access. Others have resisted these accords, considering them discriminatory mechanisms for great power control and domination of technologies.

The fourth camp attributes decisions to domestic politics, whether political party dynamics, power brokers, or public opinion (Solingen 2007; Hymans

2011). These explanations are at odds with several major international relations theories that give no weight to domestic politics (Krasner 1978; Waltz 1979; Mearsheimer 2001). There are two main issues with the domestic politics explanations. First, it is critical to examine the content of such signature and ratification debates, which frequently deal with topics related to the international system. This debate content is unsurprising for nuclear arms control treaties. Second, domestic politics arguments offer limited utility in understanding cases of delays between signature and ratification. There are numerous incidences of delays when the regime is an autocracy with a rubber-stamp legislature (e.g., Egypt) or the democratic executive and the legislative majority are from the same party (e.g., Japan). Again, signing and ratifying appear to be distinct decisions.

Finally, a fifth camp specifically addresses security considerations as a possible cause for treaty decision-making. Scott Sagan (2011) observes that regional rivals frequently wait for one another before joining the NPT. His argument is one of very few in the multilateral arms control domain that pertains to security. Recent bilateral nuclear arms control work by historians revisits Cold War treaties through a competitive security lens (Cameron 2017; Maurer 2018). Likewise, a recent political science study suggests that the security dynamics of verification may be influential in shaping broader arms control initiatives (Coe and Vaynman 2020). Yet, the multilateral literature primarily deals with the norms, superpower coercion, treaty-contingent benefits, and domestic politics explanations above. Sagan's point also does not clearly indicate why one of the rivals would take the

first step toward entering a treaty. Further work lies ahead to understand the substantive context and policy process.

Lastly, there is one quantitative piece that offers a hybrid explanation for why states sign the NPT. Way and Sasikumar (2004) suggest that states seeking security will not sign, but states seeking energy resources will sign. Their quantitative analysis has some shortcomings when compared to the historical record. Many states in challenging security environments have received nuclear umbrella guarantees (Debs and Monteiro 2017) and had little reason to remain outside of the NPT. And others that wanted nuclear energy (e.g., Brazil)—as mentioned above—did not want to participate in the treaty because they saw it as a discriminatory institution. Likewise, this study also does not attempt to explain the time-lags between signature and ratification.

Taken together, the existing literature offers many fascinating and theoretically-driven possibilities for why states join multilateral nuclear arms control treaties. However, the problem of not differentiating between signature and ratification plagues the existing literature and its conclusions. Another significant issue is that existing studies make persuasive claims for single cases that rarely generalize to a multitude of others. Given this situation, is it even possible to create a generalizable theory of entry into multilateral nuclear arms control? I argue that the answer is “Yes,” but the theory requires an extensive in-depth focus on process that is not yet present in the literature.

I contend that states may enter into these agreements for various reasons that are often consistent with the five aforementioned camps. But more

importantly, the underlying logic behind both signature and ratification is both identifiable and generalizable. It provides the basis for a new process-based theory of multilateral nuclear arms control. Such a theory would subsume much of the previous literature, accommodating diverse national narratives while also providing a new, generalizable social scientific theory.

### The Argument in Brief

The existing literature is rife with case studies and loose theories that vacillate between identifying motivations for either signature or ratification. Such explanations are diverse, covering many different schools of international relations theory. This dissertation takes as its project the investigation of various nodes of the process of multilateral nuclear arms control. If there are patterns behind signature decisions and patterns behind ratification decisions, it is important to systematize the discipline's understanding.

After treaty negotiations end, a game of political posturing and diplomatic signaling begins. My dissertation focuses on the substantive content of national treaty debates. I explore implications for countries that were players in the aforementioned diplomatic game: 35 states with advanced nuclear capabilities or proliferation aspirations that considered building the bomb.<sup>7</sup> The players are limited. Small states lacking status aspirations and civilian nuclear energy

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<sup>7</sup> This set of states offers a broad cross-section of all potential proliferations. The states are: Algeria, Argentina, Australia, Belarus, Brazil, Canada, China, Egypt, France, Germany, India, Indonesia, Iran, Iraq, Israel, Italy, Japan, Kazakhstan, Libya, North Korea, Norway, Pakistan, Romania, Saudi Arabia, South Africa, South Korea, Sweden, Switzerland, Syria, Taiwan, Ukraine, USSR/Russia, United Kingdom, United States, and Yugoslavia. These states are identified in the relevant literature. [See, e.g.: Singh and Way 2004; Jo and Gartzke 2007; Bleek 2017; Gheorghe 2019].

infrastructure receive scant attention from great powers and other interested players. For example, Malawi (1992) and Oman (1997) waited decades to accede to the NPT and did not face diplomatic pressure. Meanwhile, Brazil (1998) faced significant nonproliferation pressure for three decades and had a civilian nuclear program alongside contentious internal debates about the treaty.

This context raises a distinction: *pro forma* and *protracted* treaty debates. Oftentimes a lack of interest or internal resources for processing a treaty extends a state's time to accession. When the ratification debate occurs, it may still be *pro forma* and lacking in substantive content. Simple timelines to enter into treaties thus do not serve as a useful explanatory metric. Otherwise, Oman (1997) and Brazil (1998) appear nearly observationally equivalent in an NPT context. Their history with the treaty could not be more different. Brazil had a vigorous discussion about the treaty characterized here as a *protracted* debate.

Departing from past work in the discipline that views treaty entry as a binary outcome, this theory looks at two distinct phases of multilateral nuclear arms control. There is often considerable lag-time between the opening for signature of these accords, when states opt to sign them, and when they deposit their ratification instruments. Sometimes states never sign, and other times sign but decline to ratify, indicating dissimilar motivations underlying these decisions. I argue that signature is a diplomatic "*type signal*" and ratification is a "*commitment signal*." Both are costly, but ratification carries more sovereignty costs. It bears the full legal weight of treaty verification, punishments for withdrawal, and pivotally, legally closing the door on the nuclear option. Signature carries costs as well, such

as the status or security costs entailed in signaling that a state likely does not intend to join the nuclear club.

I begin with signature, which is a diplomatic type signal. While a state has not formally tied its hands with ratification, its decision to sign a treaty (or not) broadcasts its intentions to its allies, adversaries, and neutral third-parties. This statement of the country's position on acquiring nuclear capabilities is intimately tied to leadership views on the regional and global environment.

To better understand the signature process, I identify two groups of states: *signatories* and *non-signatories*. First, treaty signatories are either advocates or subordinates. *Advocates* accept the distribution of power codified by the treaty and may even believe it enhances their long-term security. These states also do not fear that nuclear treaties will limit their status aspirations and access to civilian nuclear technologies. *Subordinates* have concerns about the treaty's distribution of power but lack the relative power to resist a patron's demands to sign. Second, treaty non-signatories are either status dissenters or weapons dissenters. *Status dissenters* are interested in global prestige and status; they fear that unequal treaties will limit their presence on the international stage (often associated with civilian nuclear energy programs). *Weapons dissenters* view nuclear weapons as a means of security and have concerns about treaty limitations on their ability to acquire them.

My argument is that the process of signing a treaty provides a type signal related to forswearing nuclear weapons. Consequently, great powers and other interested players will bargain with non-signatories—who have status or



weapons aspirations. Bargaining may include both sticks and carrots, ranging from sanctions and abandonment to preferential trade deals and extension of a nuclear umbrella. Only after a change in the leadership's perceptions and/or favorability toward the distribution of power can non-signatories become advocates or subordinates that sign the treaty.

After signature comes ratification, which is a firmer commitment signal. In the case of multilateral nuclear arms control, states subject themselves to substantial costs. First, there is a sovereignty cost associated with forswearing nuclear weapons. Second, states face intrusive verification and international inspectors on their territory. Third, exercising nuclear treaty withdrawal clauses is also costly given the signals it sends about proliferation intent.

**Table 2:** Considerations for Ratifying a Treaty

Security Environment	Ratifies Treaty
No serious threat to survival	Yes
Serious threat, mitigated by credible third-party protection	Yes
Serious threat, lacks credible third-party protection	No

Unlike treaty signature, ratification is a decision dominated by security considerations. The process that brought a state to sign a treaty is not, however, independent from ratification. Barring changes in their security environment, former status dissenters will have much less motivation to resist ratification than former weapons dissenters. Does the state face a serious security threat to its survival? If the answer is “No,” it will ratify the treaty. If the answer is

“Yes,” but the state has credible protection from a third-party patron, it will ratify. If the answer is “Yes,” and the state does not have credible protection from a third-party patron, the security environment must change before it ratifies. This change can occur in three ways: threat dissipation, gaining a new patron or more credible commitments, and patron abandonment threats that change the national decision calculus. Table 2 depicts the possible state decisions regarding treaty ratification.

Finally, the process of treaty accession requires explanation because it has a slightly different causal logic. If a country does not sign a treaty before its entry-into-force, the two-stage signature and ratification process is no longer possible. Instead, the state must accede, which carries the same legal weight as ratification in a single action (Aust 2010, 2013). Consequently, I argue that accession is a *joint signal* that encapsulates motivations for both signature and ratification. To accede, a state must not lack protection against serious security threats, *and* it must not have reasons to be a status or weapons dissenter.

The process-based logic of the theory generalizes to issues beyond multilateral nuclear arms control. Type signaling via signature and commitment signaling via ratification also apply to treaties on international trade, human rights, and other subjects. Yet, the decision to legally forswear nuclear weapons is unlike any of these other topics. A trade agreement or human rights treaty is unlikely to have implications for state survival. For this reason, while the theory provides a useful framework to the broader discipline, further work is required to assess the unique rationales for signature and ratification in non-nuclear domains. Decisions about treaties pertaining to milk powder pricing, climate change, or even election

monitoring are considerably less likely to be determined by the presence or absence of serious security threats. Although past studies in other areas of global affairs have suggested that joining international agreements is “cheap talk” (Vreeland 2008; Hyde 2011), arms control is costly. The frequent delays between when a treaty opens for signature, when states sign, and when states ratify confirms this fact.

### Methods, Cases, and Roadmap

This dissertation offers the first process-based theory of multilateral nuclear arms control. To do so, it uses a range of qualitative methods to reconstruct decision-making timelines about treaty signature and ratification. In this sense, it takes its inspiration from “big theory” building rather than empirical hypothesis testing.<sup>8</sup> The dissertation is an exercise in process tracing and identification of causal mechanisms (George and Bennett 2004; Collier 2011; Bennett and Checkel 2015) underlying signaling behavior in multilateral nuclear arms control. I draw on observational data pertaining to four comparative historical case studies to provide generalizable conclusions about state behavior.

While multilateral arms control remains understudied and undertheorized in political science, there is certainly previous scholarship on the topic. Aside from political scientists, many international historians have written single-case studies related to the NPT. Studies of the nuclear history of countries are beneficial because they almost inevitably address treaty decision-making,

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<sup>8</sup> On the problems associated with an overreliance on hypothesis testing in international relations see: Mearsheimer and Walt 2013; Monteiro 2014.

even if this is not their primary area of focus. My dissertation draws heavily on such histories, particularly those of experts who have done extensive primary source research or were present as the events under consideration unfolded.

Further, the dissertation research process involved extensive archival research of my own. I conducted original research on thousands of documents at archives in Brazil, Japan, and the various institutions of the United Nations (UN). One of the benefits of the digital age, of course, is the online cataloging of historical documents by organizations like the UN, the Woodrow Wilson International Center for Scholars, the National Security Archive (NSA) at the George Washington University, and the U.S. State Department through its Foreign Relations of the United States (FRUS) series. Online documents have become a lifeline for qualitative researchers during the COVID-19 pandemic. As theorists of historical methods would predict (Bloch 1954; Hill 1993), my reading of archival documents yielded new findings that are not present in the literature.

Additionally, this dissertation involved original elite interviews with diplomats, policy-makers, and scientists with first-hand national and international experience with multilateral nuclear arms control. Conducting these elite interviews required a delicate balance of showing knowledge and deference, “snowball” networking to gain access, and reading in-between the lines (Aberbach and Rockman 2002; Tansey 2007; Harvey 2011).<sup>9</sup> But in the end, I was rewarded in some cases with information not found in the extant literature. For example, to my knowledge, this dissertation contains the first detailed academic interview

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<sup>9</sup> See also: Leech 2002; Mosley 2013.

reflections from Brazilian President Fernando Henrique Cardoso on entering into multilateral nuclear arms control. The former head of state was responsible for Brazil's entry into both the NPT and the CTBT during the 1990s.

Another important consideration is determining what constitutes the standard of proof in such research. Many objections have been raised regarding the reliability of qualitative interview data (Kvale 1994). Inevitably, some interviewees naturally had a propensity to engage in post hoc rationalization or self-aggrandizement. I was cognizant of the need to cross-validate the qualitative data (Elliott and Timulak 2005). That is, I opted not to use data unless I could situate it in the historical record as determined by analysis of other sources: archival materials, published works, and further interviews. I also interviewed many scholarly authorities on particular cases to gain additional detailed insights into my interview data's context and validity.

All in all, the dissertation uses a variety of sources and methods to interrogate decision-making about multilateral nuclear arms control. The data availability for cases varies based on the recency of decisions, state secrecy procedures, and the level of document digitization. More recent decisions—and those taken by authoritarian regimes—may be subject to document classification issues. However, they also provide a more extensive base of experts with memories of the critical events. The COVID-19 pandemic naturally made physical archival access and elite networking increasingly difficult. Regardless, in each case, the evidence I obtained illuminates the processes of arms control.

The dissertation includes four comparative historical case studies, each representing an initial state type related to signing the NPT. The cases are drawn from the previously mentioned group of 35 potential proliferators identified in the extant literature. They are: Egypt, an advocate; Romania, a subordinate; Brazil, a status dissenter; and Japan, a weapons dissenter. In the dissertation, I evaluate why these states made decisions about signing and ratifying the NPT and the CTBT. This dissertation thus draws on decades of decision-making in different contexts to build a generalizable theory.

The main objective is to capture changes over time that permitted each state to sign, ratify, or accede to multilateral arms control treaties. While all four states wound up ratifying or acceding to the NPT, there were times when signature or ratification was not desirable or possible. My process-tracing approach is analogous to time series data, as causal process observations can identify catalysts for changing dependent variable outcomes. They help answer the essential question for my theory: What conditions were necessary to generate the relevant mechanisms for moving forward on arms control?

There are additional reasons why these cases are collectively of interest and offer enormous variation across a range of critical dimensions:

- Extended signature and ratification timelines provide ample evidence for process tracing of changes;
- Within and cross-case variation of signature, ratification, and accession decisions;
- Multiple geographic regions, security alliances, and regime types;

- Varying levels of experience with, and interest in, nuclear technologies;
- Shifting regime types, civilian and military nuclear technology interest, and security environments allow case movement between representative and outlier status on certain measures, enabling identification of the impact of covariate changes over time.

Beyond validating the theory, my original research provides new insights that, in some cases, challenge existing accounts of nuclear decision-making.

The first case is Egypt. Egypt was a strong proponent of the NPT and signed it on July 1, 1968, the day it opened for signature. Cairo was an advocate for the treaty that signed with very little pressure because Egyptian leaders believed the nonproliferation regime would constrain Israel—particularly in the wake of the 1967 Six-Day War. Yet, Egypt waited until 1981 to ratify. During this 13-year gap, Israel continued to advance its nuclear weapons program and defeated Egypt in the 1973 Yom Kippur War.

While the existing literature primarily attributes Cairo's eventual commitment signaling to a desire to obtain nuclear power reactors (Kats 1985; Barnaby 1989; Solingen 2007), I find that security considerations mattered more. Today, Egypt does not have a single nuclear power reactor on its sovereign territory. It was not until the Camp David Accords in 1978 that Egypt's security environment began to change in a way that provided a path to ratifying the NPT. Israel soon also dropped its opposition to Egyptian proposals in the UN for an eventual Middle East Nuclear-Weapon-Free Zone (MENWFZ). Although Egypt ratified the NPT in 1981, Cairo was again disappointed by Israel not following suit

in the years afterward. Egypt signed the CTBT in 1996—once again issuing an advocate’s type signal—but has not ratified to this day due to the security environment created by Israel’s non-participation in the NPT.

The second case is Romania. To many leaders’ surprise, Romania broke with the Warsaw Pact during the negotiations on the NPT. Bucharest frequently sided with developing state critics of the treaty during the negotiations. The Romanian concern was that the NPT would allow unequal access to civilian nuclear technology and hinder national growth. Regardless, Bucharest signed the accord the day it opened for signature in 1968 and ratified in early 1970. The Romanian commitment signal even came a month before the Soviet Union ratified.

Existing literature describes Romania as having significant autonomy from its Warsaw Pact allies. While it recognizes that Soviet coercive attempts occurred, it points to a desire to obtain civilian nuclear technologies (Gheorghe 2013a, 2014) and be part of a successful treaty (Crump-Gabreëls 2017) as the main rationales for the Romanian about-face. Interestingly, Romania’s first nuclear power reactor did not achieve criticality until 1996—nearly 30 years after the NPT opened for signature. In contrast, I find that Romania was a subordinate state, and pressure from the Soviet Union and other Warsaw Pact members shaped its decision-making. The Warsaw Pact tolerated Romanian autonomy on some issues, but the NPT was not among them. Signing and ratifying the CTBT in the 1990s as an advocate was more straightforward, as Bucharest had already legally forsworn nuclear weapons and had no proliferation aspirations.



The third case is Brazil. A status dissenter, Brazil was among the chief critics of the NPT. Its officials frequently characterized the treaty as locking in an unequal power distribution and depriving states of civilian nuclear energy access. The country's authoritarian leaders refused to sign, even after the United States and its allies applied significant nonproliferation pressure. Brasília sought nuclear energy for prestige and national development while having great difficulty obtaining foreign technology. This situation triggered renewed efforts through indigenous development in both civilian and military settings. Brazil mastered the fuel cycle in 1987 under a new democratic administration, and together with its regional rival Argentina, joined the nonproliferation regime during the 1990s.

Prominent explanations for why Brazil reversed course—both acceding to the NPT and ratifying the CTBT in 1998—usually pertain to Brazil's democratization (Graham 2002; Goldemberg, Alvim, and Mafra 2018) or nonproliferation norms (Ruble 2010). Yet, I find more persuasive nuanced explanations pointing to Brazil's mastery of the nuclear fuel cycle (Patti 2012; Debs and Monteiro 2017). But even these studies overlook the implications of a changing NPT. Issues with Iraq and North Korea changed global perceptions of non-parties to the treaty. The civilian nuclear program was no longer threatened by the treaty, and being in the accord would now enhance—rather than diminish—Brazil's international status. Brasília could even hedge as a latent nuclear state with the ability to develop the bomb should it ever become necessary.

The fourth and final case is Japan. Despite the legacy of Hiroshima and Nagasaki, the extension of the U.S. nuclear umbrella, and Japan's Three Non-

Nuclear Principles, Tokyo had marked difficulty accepting the NPT. Non-nuclear norms and the Japanese “atomic allergy” (Ruble 2009; Akimoto 2020) do not satisfactorily explain this period of behavior. While other studies point predominantly to a desire to have equal treatment with European countries in the realm of nuclear safeguards (Quester 1970; Paul 2000), I agree with accounts that security was the most crucial concern (Akiyama 2018; Abe 2020). I offer new evidence and historical analysis demonstrating that security concerns provide the most compelling explanation for Japan’s NPT decision-making.

Japanese leaders initially type signaled as weapons dissenters and held out on signing the NPT for nearly two years. During this time, there were frequent discussions of the security risks of forswearing nuclear weapons, and the government commissioned multiple secret studies to assess the feasibility of proliferation. Ultimately, Japan signed the treaty in 1970 once the government concluded in principle that nuclearization was not the best path forward. Yet, it was not until 1976 that Japan abandoned the nuclear option by commitment signaling its ratification. Hardliners in the government and the Diet were unconvinced that the treaty would serve Japanese security interests. There were also doubts about the reliability of the U.S. security guarantee. In the end, the necessary condition for ratifying was a series of private and public gestures by the United States to reassure Tokyo of the credibility of extended nuclear deterrence. Signing and ratifying the CTBT came easily as Japan had long abandoned the nuclear option and had firm U.S. nuclear security guarantees.

This dissertation's detailed coverage of national perspectives on arms control in the pre-negotiation, negotiation, and post-negotiation phases is unlike any existing international relations study. Its marshalling of documents and data reconstructs narratives and decision-making timelines that are not present in the extant literature. Based on the preceding discussion, my dissertation offers three central contributions to the study and analysis of nuclear weapons:

1. A novel process-based theory providing a compelling explanation for an important but understudied phenomenon in global politics;
2. Extensive new evidence, data collection, and historical analysis that provide insights that challenge existing theories and case studies;
3. Policy-relevant implications related to understanding differing levels of state commitment to multilateral nuclear arms control.

To examine legal nuclear forbearance, this dissertation proceeds in six further chapters. Chapter 2 introduces my process-based theory of multilateral nuclear arms control in expanded detail. Chapter 3 analyzes the case of Egypt, an early advocate of arms control that later faced great difficulties in commitment signaling. Chapter 4 presents the case of Romania, a subordinate state whose patron forced it to part ways with its foreign policy preferences on issues of nuclear diplomacy. Chapter 5 chronologizes the case of Brazil, a status dissenter that took decades to accept the treaties committing the state to a non-nuclear future. Chapter 6 assesses the case of Japan, a weapons dissenter that required iron-clad external security guarantees to permanently disavow the nuclear option. Finally, Chapter 7 summarizes the findings and implications of the dissertation.

## **Chapter 2 – A Theory of Multilateral Nuclear Arms Control**

The study of nuclear proliferation has dramatically increased in breadth and depth over the past two decades. New methods, theories, cases, and data have contributed to compelling explanations for why states seek the bomb. In recent years, the literature has expanded to include strategies states use to proliferate (Narang 2016/2017) and the likelihood that would-be proliferators will succeed in going nuclear (Hymans 2012; Braut-Hegghammer 2016). These scholarly findings have implications not just for understanding proliferation; they also shed light on why states do not nuclearize. A failure to proliferate may be a matter of a lack of willingness and opportunity (Debs and Monteiro 2017), technical or managerial ineptitude (Hymans 2012; Braut-Hegghammer 2016), or counterproliferation efforts (Braut-Hegghammer 2011; Raas and Long 2017; Whitlark 2017).

However, the focus on why states choose not to proliferate—or are unable to—leaves important topics unaddressed. This dissertation's focus on legally forswearing nuclear weapons is among them. In the atomic age, many technically capable states permanently renounced the nuclear option through multilateral nuclear arms control treaties. Such decisions are not equivalent to choosing to engage in nuclear forbearance at a specific time in history. States that join multilateral agreements may face both ex-ante and ex-post costs ranging from diminished status to intrusive verification, even including harsh economic and military punishments for withdrawal. Realist scholars have long argued that the international system is chaotic, and today's ally could be tomorrow's adversary (Waltz 1979; Mearsheimer 2001). Since nuclear weapons can help guarantee

state survival (Waltz 1981; Monteiro 2014), decisions to forswear them are puzzling indeed.

The most common way states forswear nuclear weapons is by joining multilateral nuclear arms control treaties. These arrangements include the NPT, the CTBT, the TPNW, and a multitude of NWFZs. One future agreement under consideration is a Fissile Material Cut-Off Treaty (FMCT). Such treaties serve notable functions in international security. For states that are not nuclear-armed, they involve prohibitions on nuclear weapons or essential activities for producing the bomb—like fissile material production or nuclear test explosions. Multilateral treaties are also thought to establish norms of appropriate conduct (Sagan 1996/1997; Tannenwald 1999, 2007; Rublee 2009; Budjeryn 2015, 2016) and often have verification regimes to detect and deter non-compliance (Imber 1982; Blix 1992; Avenhaus et al. 1996; McGrath 2009; Dahlman et al. 2011; Brown 2015; Persbo 2016; Herzog 2017; Carnegie and Carson 2019).

Despite their continued relevance, academic literature on these treaties is limited. This gap contrasts with bilateral arms control studies, which are beginning to make a resurgence (Cameron 2017; Kreps, Saunders, and Schultz 2018; Maurer 2018). Although many scholars have concluded that multilateral treaties can often achieve their principal objectives (Coe and Vaynman 2015; Fuhrmann and Lupu 2016; Herzog, Ko, and Lee 2021), the literature pays scant attention to how these regimes gain members.<sup>10</sup> The result is made plain in a telling

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<sup>10</sup> Others, statistically looking only at the NPT, conclude that this treaty may have had mixed or negative effects. [See: Kroenig 2009; Bleek 2010b; Fuhrmann and Berejikian 2012; Bleek and Lorber 2014; Brown and Kaplow 2014; Horowitz and Narang 2014; Miller 2014].

statement by Scott Sagan (2010, p. 34): “I am struck at how little we know about why different governments joined the NPT.” And the discipline has far more knowledge about the NPT than it does about other related treaties.

Of particular interest are the activities of the 35 states identified in Chapter 1 and the previous literature as potential proliferators due to historical capabilities and interest in the bomb (Singh and Way 2004; Jo and Gartzke 2007; Bleek 2017; Gheorghe 2019). This expansive universe of cases includes those states with capabilities and/or intent to develop nuclear weapons, making them the most relevant states to study for understanding legal nuclear forbearance. These countries do not just include well-known proliferators like Iran, Iraq, and Libya. Also on the list are states such as Algeria, Argentina, Brazil, Egypt, Germany, Italy, Japan, Romania, South Korea, Sweden, Switzerland, and Taiwan.

As discussed in the previous chapter, potential proliferators frequently have a time-lag between signing and ratifying treaties. It is unsurprising that states with advanced nuclear capabilities or interest in developing nuclear weapons would struggle to legally forswear these armaments. Yet, the often years-long gaps between signature and ratification point to differential reasoning behind these nuclear choices. The delays consistently appear regardless of variation in regime types, economic strength, alliance arrangements, regions of the globe, and much more. Thus, common political science variables do not appear to describe the phenomenon under discussion.

My dissertation seeks to fill this gap in the literature by analyzing why advanced nuclear states legally forswear nuclear weapons. Its core assumption is

that after negotiations, decisions to participate in such agreements involve two separate but interrelated phases: signature and ratification. This focus is distinct from innovative new work looking at the design of arms control treaties (Reddie 2019).<sup>11</sup> Drawing conclusions about the subject of inquiry requires a detailed understanding of conceptual differences between motivations underlying state signature and ratification decisions.

Toward that end, this chapter offers a novel theory of multilateral nuclear arms control. It explains that participation in treaties is not a simple binary process wherein a state is either inside or outside a regime. Rather, arms control is multi-phased and consists of different sequential decision points.

To develop the theoretical logic of my dissertation, this chapter proceeds in six sections. First, I explore the complexities of multilateral arms control, identifying several distinctions between these initiatives and their bilateral cousins. Second, I highlight the scope and importance of policy decisions that states can make in the aftermath of arms control negotiations. Third, I lay out the processes by which states may opt to sign on to treaties and provide an original explanatory typology of state postures on arms control. Fourth, I consider the nature of ratification debates following signature and highlight variables predicting state behavior. Fifth, I discuss the phenomenon of accession, which occurs when a treaty has entered into force and a state may join but can no longer sign. I

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<sup>11</sup> Of course, scholars can learn many things about a state's posture vis-à-vis an arms control treaty by studying negotiation records. While I draw on these records in the subsequent chapters, my purpose here is limited to understanding state entry into relevant arms control regimes, not causally dissecting how negotiations impact the design of treaties.

conclude by offering insights into pathways for achieving participation in multilateral arms control and comment on the theory's broader generalizability.

### The Multilateral Arms Control Context

The process of negotiating multilateral nuclear arms control treaties is often long and arduous. Negotiations on the NPT took place in the Eighteen-Nation Committee on Disarmament (ENDC) in Geneva from 1965–1968.<sup>12</sup> Before then, it took years for the United States and the Soviet Union to agree to a framework for negotiating the accord. And in fact, the NPT's roots date back even further—to the calls for verifiable nuclear disarmament under international control of the U.S. Baruch Plan and Soviet Gromyko Plan of 1946.<sup>13</sup>

The NPT opened for signature on July 1, 1968, dividing the world into the five permitted Nuclear-Weapon States (NWS) of Britain, China, France, the United States, the USSR, and the remaining Non-Nuclear Weapon States (NNWS). The treaty prohibited the NNWS from seeking the bomb (Article II) and barred the NWS from helping the NNWS proliferate (Article I). It also established treaty-based obligations for International Atomic Energy Agency (IAEA) safeguards to prevent diversion of fissile materials from civil pursuits to weapons

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<sup>12</sup> For further studies touching on elements of the NPT negotiations see, e.g.: Nye 1988; Brands 2007; Swango 2009; Coe and Vaynman 2015; Popp, Horovitz, and Wenger 2017. The 18 members of the ENDC included five NATO allies (Canada, France, Italy, the United Kingdom, and the United States), five Warsaw Pact allies (Bulgaria, Czechoslovakia, Poland, Romania, and the Soviet Union), and eight non-aligned states (Brazil, Burma, Egypt, Ethiopia, India, Mexico, Nigeria, and Sweden). [See: A/C.1/L.339]. In practice, only 17 states participated. France declined its seat due to disagreement with U.S.–Soviet collusion and lack of willingness to consider input about treaty language. All UN documents are referenced in this dissertation by official UN Document Codes.

<sup>13</sup> The Baruch Plan was largely based on the Acheson–Lillienthal Report.



programs (Article III). But in exchange, the NNWS received guarantees of access to peaceful nuclear energy (Article IV) and NWS commitments to eventually eliminate nuclear arms (Article VI). The NPT was thus a wide-ranging treaty involving legal commitments to forswear nuclear weapons. It entered into force on March 5, 1970, and was indefinitely extended on May 11, 1995.

Likewise, the CTBT of 1996 was not solely a product of the post-Cold War era. Indian Prime Minister Jawaharlal Nehru had first proposed a “standstill agreement” to prohibit nuclear explosive testing in 1954 (Mackby 2016, p. 262). Nehru’s proposal was considered the next year at a Sub-Committee of Five (Britain, Canada, France, United States, USSR) meeting in London but failed to attain consensus. The CTBT negotiations in the 1990s were a culmination of stepwise limitations on nuclear tests, predominantly agreed to in a U.S.–Soviet framework: the LTBT of 1963, the Threshold Test-Ban Treaty (TTBT) of 1974, and the Peaceful Nuclear Explosions Treaty (PNET) of 1974. A total of 61 states participated in the CTBT negotiations from 1993–1996 at the Conference on Disarmament (CD) in Geneva.<sup>14</sup> The treaty opened for signature on September 24, 1996, banning all nuclear explosions underground, underwater, and in the Earth’s atmosphere. To this day, it has not entered into force.

A common theme among the NPT and the CTBT is the significant number of players at the bargaining table. Involved states had diverse security environments, government types, and histories with military and civilian nuclear technologies. Complicating the process of legally forswearing nuclear weapons

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<sup>14</sup> For literature on the CTBT negotiations see, e.g.: Ramaker et al. 2003; Johnson 2009; Melamud, Meerts, and Zartman 2014; Mackby 2016.

was the complex entry-into-force language negotiated for each treaty (Herzog 2021). The NPT required the ratifications of Britain, the United States, the Soviet Union, and 40 additional states.<sup>15</sup> The CTBT is more elaborate. It requires the ratification of 44 “nuclear-capable” states with research reactors or civilian nuclear energy programs before entering into force.<sup>16</sup> Currently, there are eight holdouts among the 44: China, Egypt, India, Iran, Israel, North Korea, Pakistan, and the United States. Some of these states have signed but not ratified; others have not signed. Clearly, there are different levels of test ban participation.

Existing models of nuclear arms control do not focus on this multilateral context. Since the models are predominantly from the Cold War, they draw on the rich history of U.S.–Soviet negotiations. Accords like the ABM Treaty of 1972 and the Intermediate-Range Nuclear Forces (INF) Treaty of 1987 were two-player games. Such treaties came to fruition because both sides agreed on guidelines for armament reductions and verification. In two-player games, strong disagreements may lead to a breakdown of negotiations. Such was the case in the dispute between U.S. President Ronald Reagan and Soviet Premier Mikhail Gorbachev over the testing of the U.S. Strategic Defense Initiative (SDI), or “Star Wars.” Their inability to compromise at the 1987 Reykjavík Summit prevented the realization of a bilateral nuclear disarmament pact (Schlesinger 1986; Perle 1987; Adelman 2014). Further, bilateral arms control usually requires a simple exchange

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<sup>15</sup> See: NPT, Art. IX, para. 1–2.

<sup>16</sup> See: CTBT, Annex 2.

of diplomatic notes to enter into force after both parties ratify (Herzog 2021). This entry-into-force situation stands in stark contrast to that of the NPT and the CTBT.

The number of players in  $n$ -sided multilateral talks increases the probability of unsatisfied participants for even successfully negotiated treaties. Consider the NPT and CTBT negotiations. These discussions were not merely limited to 18 and 61 players, respectively. Both treaties involved the states at the table consulting with countless allies. And each accord has global application. The odds of state participants—and non-participants—in arms control dialogue being dissatisfied increases for countries that are not what Monteiro (2014, p. 46) terms “major powers.” States in this category “possess sufficient defensive capabilities to inflict heavy costs on any state that decides to attack them.” Non-major powers usually lack the leverage to shape talks or stonewall discussions.

Still, states that refuse to participate in negotiations lose their seat at the table. Dissenting parties may thus instead opt to express their reservations in other ways besides abstaining from talks. These methods include attempting to derail the negotiations or to “water down” the final agreement. At other times, states may confront pressures to join treaties they had no role in negotiating.

In short, multilateral nuclear arms control deals with the difficult state decision of legally forswearing nuclear weapons. It also involves a high likelihood that many states will object to a final agreement that opens for signature. For this reason, perhaps it is no wonder that the histories of the NPT and CTBT are rife with states delaying their signature, waiting years between signature and ratification, acceding decades after treaty entry-into-force, or simply declining to

sign or ratify. Legally forswearing nuclear weapons is no easy task, especially for capable and interested states.

The existing literature discussed in the preceding chapter offers initial theorizing into why advanced nuclear states enter multilateral nuclear arms control. The scholarship breaks down into five camps regarding the NPT:

1. International norms (Ruble 2009; Budjeryn 2015, 2016; Fuhrmann and Lupu 2016);
2. Superpower coercion (Coe and Vaynman 2015; Gerzhoy 2015; Gibbons 2016);
3. Treaty-contingent benefits (Paul 2000; Gheorghe 2013a, 2014);
4. Domestic politics (Solingen 2007; Hymans 2011);
5. Security considerations (Sagan 2011).

Each of the five camps offers a starting point for my study.<sup>17</sup>

The existing literature does, however, leave space for three critical improvements. First, since national treaty narratives differ and these works address a limited number of cases, the literature has generalizability shortcomings. Second, they usually emphasize one particular cause even though multiple factors may be at play. Third, they view the process of arms control as binary (a state commits, or it does not) instead of disaggregating the two steps of the process. Entry into treaties is a subset—not the primary focus—of these studies. Accordingly, there is fertile ground for new research seeking to explain signature and ratification decisions systematically.

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<sup>17</sup> Way and Sasikumar (2004) provide a hybrid explanation combining security and treaty-contingent benefits.

Potential proliferators contemplating their positions on multilateral nuclear arms control face numerous systemic considerations. Their security environment may include allies and adversaries alike. Each decision states make in the domain of nuclear diplomacy sends signals to both sets of interested actors. The need to focus directly on strategic considerations involving allies and adversaries highlights just a sample of the interacting factors that influence arms control decision-making. Technical aspects also matter because an advanced nuclear state must determine how treaties will affect the balance of power and capabilities.<sup>18</sup> Such assessments are not limited to acquiring capabilities themselves, as agreeing to permanently forswear nuclear weapons can change perceptions of a state's international status.

Nuclear arms control agreements also have diverse implications for civilian atomic energy schemes. States must evaluate the consequences of these treaties for the nuclear supply chain.<sup>19</sup> For instance, many critics of the NPT expressed disbelief at the promises of Article IV nuclear energy guarantees and the superpowers' civilian nuclear cooperation programs (Duarte 2016; Spektor 2016). Instead, these critics—usually from the developing world—saw arms control and nonproliferation as a tool for creating a restrictive nuclear marketplace. Peaceful uses of atomic energy do not just involve electricity or medical radioisotope production. From the 1950s–1970s, several NNWS sought

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<sup>18</sup> There is a precedent for this line of thinking in the nuclear proliferation literature. [See, e.g.: Bas and Coe 2012, 2016, 2018; Debs and Monteiro 2014, 2017; Lanoszka 2014, 2018a; Monteiro and Debs 2014; Gerzhoy 2015; Debs, Herzog, and Monteiro 2019].

<sup>19</sup> On the relationship of civilian nuclear power programs and weapons proliferation see: Miller and Sagan 2009; Fuhrmann 2012b; Miller 2017; Baron and Herzog 2020; Herzog 2020.

autonomous peaceful nuclear explosions (PNEs) for excavating canals, extracting oil and natural gas, and seismic sounding of the Earth's crust and upper mantle.<sup>20</sup> The NPT's prohibition on the NNWS developing devices for PNEs drew protests, as these explosions were seen as a tool to enhance international status and achieve development goals (Popp, Horovitz, and Wenger 2017).

### Pathways to Joining Treaties

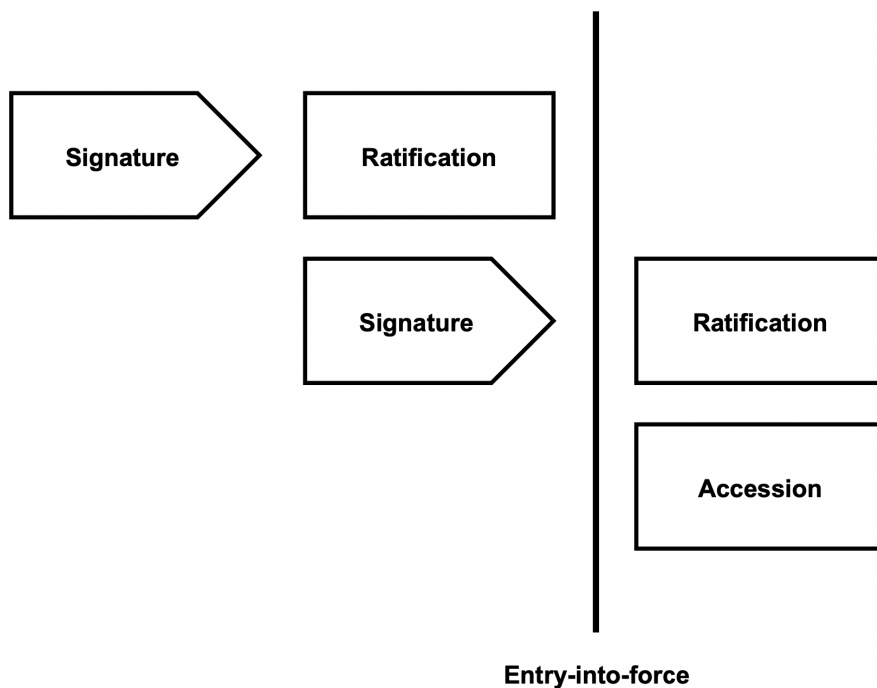
The frequent and lengthy gaps between when states sign and ratify multilateral nuclear arms control treaties illustrate the difficulty of legally forswearing nuclear weapons. Interestingly, as Table 1 in Chapter 1 displayed, such delays are commonplace irrespective of significant variation in political science variables. Across both space and time, decisions to sign and ratify agreements appear to have different drivers. If the necessary conditions were the same for both steps, such time-lags would not occur; signature and ratification would take place almost simultaneously. Yet, the existing literature addresses either signature or ratification only, overlooking varying levels of treaty endorsement.

After negotiations end and an agreement opens for signature, there are three potential routes through which states may join it. These options are open to states whether or not they are parties to the treaty negotiations. Figure 1 depicts each of the pathways for entering into multilateral nuclear arms control, and more generally, most international treaties.

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<sup>20</sup> The United States and the Soviet Union even carried out nearly 200 combined PNEs during the Cold War, while India declared its 1974 "Smiling Buddha" test to be peaceful as well. [See: Bergkvist and Ferm 2000; Herzog, Ko, and Lee 2021].

**Figure 1: Joining Multilateral Treaties**



Note that the path to ratification remains unchanged for states that signed before entry-into-force. Accordingly, the first two paths involve decisions to sign a treaty and follow with ratification. In democracies, signature is an executive function, whereas ratification usually requires a legislative vote. Autocratic regimes have differing legislative participation levels in adopting treaties based on the nature of state centralization. Even so, timelines to signature and ratification vary wildly with no clear patterns across regime types. Chapter 1 also discussed the importance of investigating the substantive content of treaty negotiations and national debates. These domestic and international conversations—rather than coding and analyzing government structures—are the most appropriate tool for understanding treaty decision-making in advanced nuclear states.

A third path also appears in Figure 1: accession. The procedures for participating in a multilateral arms control agreement change once a treaty has entered into force under international law, as the NPT did in 1970. Article IX of the NPT and Article XIII of the CTBT both explicitly indicate that states may no longer sign these treaties after entry-into-force. As noted above, states that have signed but not yet ratified the treaty may still follow the path of signature and then ratification after entry-into-force. States that have not signed must engage in the act of accession. The Vienna Convention on the Law of Treaties of 1969 spells out the procedures for acceding to treaties. The convention explains that accession “has the same legal effect as ratification.”<sup>21</sup>

There is also wide variation in the timelines that states take pursuing these pathways. Five potential trajectories again affirm that multilateral arms control is not, in fact, a binary outcome. First, states may sign (sometimes with a delay) and quickly ratify the treaty. Second, they may sign and wait many years to ratify. Third, they may sign and then never ratify. Fourth, they may delay signature until after entry-into-force and then accede. Fifth, they may opt to neither sign nor ratify. Each trajectory showcases the non-binary nature of arms control due to different motivations for signature and ratification as well as varying commitment.

This section’s closer look at the politics of entering treaties demonstrates that it is essential to address the gap in the existing literature. Current scholarship in nuclear politics often uses the terms “signature,”

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<sup>21</sup> Vienna Convention on the Law of Treaties (May 23, 1969), 1155 *UNTS* 331, 8 *ILM* 679, Art. II, para. 1b, Art. XV. See also: Aust 2010, 2013.



“ratification,” and “accession” to describe the act of joining treaties. But what are the practical differences of these actions for multilateral nuclear arms control?

Fortunately, there is scholarship in other areas of international relations—particularly human rights—that provides a point of departure for my theory. Vreeland (2008, p. 78) points out that some dictatorships may sign human rights treaties for “symbolic” reasons since their obligation level will be lower than that of ratification. In doing so, these states send signals to their interlocutors. This perspective also receives support from other political scientists, sociologists, and international lawyers. Past studies in these fields have distinguished signature and ratification as discrete processes implying different treaty commitment levels (McDade 1985; Cole 2009; Aust 2013; Ryckman 2016). Cole (2009) posits that the difference between signature and ratification is that the former entails a weaker obligation than the latter. This depth of obligation argument stands in contrast to Vienna Convention language requiring state signatories not to violate the spirit of an accord prior to their ratification.<sup>22</sup> McDade (1985) writes that states have dissimilar obligations during the phases of signature and ratification.<sup>23</sup>

Taken together, my analysis of treaty decision-making yields useful theoretical observations. Signature and ratification of multilateral nuclear arms control treaties are distinct choices. Otherwise, the familiar signature–ratification delays would not be so prominent in the historical record. Scholarship from outside

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<sup>22</sup> See: Vienna Convention on the Law of International Treaties, Art. XVIII, para. A. Somewhat ironically, the United States has signed but not ratified the Vienna Convention.

<sup>23</sup> McDade discusses the UN Convention on the Law of the Seas with a view toward generalizing to other treaties.

the nuclear sphere indicates that ratification is a deeper, firmer commitment to a treaty than signature. The reason for this is that ratification has greater compliance obligations for states. When deciding to legally forswear nuclear weapons, the contours of each step of the process will matter to states. A decision to sign will not always guarantee a quick ratification—or ratification at all. In addition, accession has the same standing as ratification, but acceding to a treaty is a one-step process rather than a two-step process. Accession decisions will need to satisfy signature and ratification motivations simultaneously.

My contention after surveying the literature is that signature implies an “expectation” of compliance, whereas ratification is an “obligation.” In an interview, I asked Lassina Zerbo, the Executive Secretary of the Comprehensive Nuclear-Test-Ban Treaty Organization (CTBTO), about the difference between signature and ratification. Zerbo explained to me that it was simple. In his view, states signing the CTBT are saying “No” to nuclear tests, whereas states ratifying are saying “Never” to nuclear tests.<sup>24</sup> This notion matches my interpretation.

### Type Signaling and Treaty Signature

If treaty signature and ratification were essentially two sides of the same coin, the aforementioned time-lags would not appear consistently. Put another way: If these decisions shared a common set of underlying motivations, ratification would almost always follow shortly after signature. This would be especially likely in cases where a state achieved its aims at the bargaining table. The historical record, however, simply does not show such a trend.

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<sup>24</sup> Author interview with Zerbo, 2019.

To understand these distinctions of process, it is instructive to borrow a well-known example from outside nuclear arms control. Recall U.S. President Woodrow Wilson's Fourteen Points in the lead-up to negotiate the Treaty of Versailles.<sup>25</sup> The League of Nations was the president's brainchild, an organization situated uniquely in the realm of the ideology now referred to as Wilsonian idealism. Wilson promptly signed the Covenant of the League of Nations at the Paris Peace Conference on June 28, 1919, signaling the U.S. intent to support the organization. However, the U.S. Senate bitterly debated the global security environment and the U.S. role in the world. Ultimately, the Senate rejected the Treaty of Versailles and the League of Nations. Signature and ratification were unquestionably different decision points.

The fate of the League of Nations is hardly an isolated example. Similar situations have arisen in the realm of multilateral nuclear arms control. The timing gaps are also cross-cutting, affecting advanced nuclear states in different world regions with a diversity of descriptive covariates. For this reason, the previous chapter highlighted the shortcomings of the literature on nuclear proliferation in predicting legal forswearing of nuclear weapons. The field lacks persuasive explanations for this process, which occurs through the steps of treaty signature and ratification.

Decisions about treaty signature do not always occur expeditiously, as governments have limited resources and complex policy agendas. For instance, a Tongan diplomat noted that her country's ability to join nuclear treaties was often

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<sup>25</sup> See: Kissinger 1994; Steigerwald 1994; Cooper 2011.

dependent on government capacity and national priorities.<sup>26</sup> Many developing countries wait years to sign onto such treaties, precisely because—while signing may be relatively costless for them—the treaty may bear little relevance to their regional situation and interests. Smaller states also may face fewer arms control pressures from great powers than their potential proliferator counterparts. Since nuclear arms control has unquestionable implications for emerging nuclear states, their governments are likely to consider the treaty's content and stake out strong positions either for or against it. These potential proliferators are the 35 states at the heart of this dissertation. The actions of other states fall outside its scope.

An advanced nuclear state with the option to sign an agreement legally forswearing nuclear weapons must navigate the strategic interaction of adversary and allied pressures. Providing positions on treaties offers signals about a state's intentions (Goldsmith and Posner 2002; Martin 2005). Rivals may demand that their adversary sign an arms control accord as a show of pacific intent and mechanism for building transparency to overcome the security dilemma.<sup>27</sup> The provision of information and an initial commitment to forswearing nuclear capabilities may also help rivals avert some of the most common causes of interstate war.<sup>28</sup> It is not uncommon to see enduring rivals sign multilateral nuclear arms control treaties in close temporal proximity to one another (Sagan 2011). If

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<sup>26</sup> Author interview with Vaea, 2018. The CTBTO's liaison to the UN's New York office also stressed the difficulties faced by many arms control diplomats from small states whose portfolio may be of limited interest to their national governments. [Author interview with Rosemberg, 2019].

<sup>27</sup> On the security dilemma see: Jervis 1978.

<sup>28</sup> See, e.g.: Fearon 1995.

Jervis (1993) is correct, and arms control intends to bring peace to rivalrous dyads, signing such treaties may well be in the national interest.

Signing treaties and signaling intent can also improve relations within alliances. States that take the first step toward legally forswearing nuclear weapons suggest to their allies that the security partnership is not likely to result in entrapment in a nuclear conflict. Signing a multilateral arms control treaty functions as a strong signal to allied powers that a state seeks to forgo capabilities that could raise tensions between the alliance and opposing factions. Such signals are likely to increase a state's ability to participate in transactions involving civilian nuclear technologies and avoid technology denial sanctions (Miller 2014). Great power patrons that successfully convince protégés to sign such accords reify existing hierarchical relationships (Lake 2009). Persuasion indicates bloc cohesion, demonstrating that a patron can control its clients.

As Trager (2010, 2017) explains, even diplomatic “cheap talk” carries signals of a state's intentions. Signing a treaty, however, is far from cheap. Treaty signature (or non-signature) is a costly signal due to three associated costs:

1. Signatories that approve of principles many states perceive as unequal and discriminatory incur a status cost;
2. Signatories suggest to their opponents that they will not pursue weapons that would alter the balance of power in their favor;
3. Non-signatories with status objections risk other states mistakenly viewing them as seeking the bomb.<sup>29</sup>

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<sup>29</sup> On costly signals see, e.g.: Jervis 1978; Downs and Rocke 1990; Fearon 1997; Kydd 2000.

Signature sends a signal that a state plans to adhere to the principles enshrined in a treaty, even if its national commitment level stops short of ratification. International legal history has countless examples of states signing multilateral treaties without having any near-term plans to ratify.<sup>30</sup>

I argue that decisions by advanced nuclear states to sign—or refuse to sign—treaties forswearing nuclear weapons signal their state “type.”<sup>31</sup> Before a treaty opens for signature, a state’s motives and intentions are not always clear. Treaty proponents may even argue against the agreement during negotiations to extract concessions. The result is information asymmetries during multilateral nuclear arms control negotiations. Yet, a *type signal* regarding treaty signature communicates insights about state intentions.

Nuclear weapons can have an enormous impact on a state’s national survival. Endorsement of treaties that foreclose the nuclear option thus symbolizes an acceptance of the balance of power codified by the accord. Signing creates expectations of compliance with the treaty and indications that the state will likely not attempt to challenge and overturn the nuclear status quo. Declining to sign a treaty signals a rejection of the power dynamics enshrined in the agreement. It creates unclear expectations among a state’s adversaries and allies. Given these differences, I identify two umbrella categories of states: *signatories* and *non-signatories*. Within these categories, there are further subdivisions for a total of

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<sup>30</sup> See, e.g.: Vreeland 2008; Ryckman 2016.

<sup>31</sup> On type signaling see: Glaser 2010, p. 65.

four state types. Table 3 provides an explanatory typology. The examples are this dissertation's case studies.

Treaty signatories are emerging nuclear states that are willing to make the first step toward legally forswearing nuclear weapons by signing multilateral agreements. Signing means embracing the balance of power the treaty would consolidate. States may have various overarching motivations for doing so. Hence, within the category of signatories, it is helpful to distinguish between two types: *advocates* and *subordinates*.

**Table 3:** Typology of Initial State Postures on the NPT

	Type	Motivations	Example
<b>Signatories</b>	Advocates	<ul style="list-style-type: none"> <li>• Accept treaty's balance of power</li> <li>• View treaty as long-term benefit</li> </ul>	Egypt
	Subordinates	<ul style="list-style-type: none"> <li>• Have concerns about treaty's balance of power</li> <li>• Lack autonomy to resist patron demands to sign</li> </ul>	Romania
<b>Non-Signatories</b>	Status Dissenters	<ul style="list-style-type: none"> <li>• Object to treaty's balance of power</li> <li>• Desire prestige and enhanced global status</li> </ul>	Brazil
	Weapons Dissenters	<ul style="list-style-type: none"> <li>• Object to treaty's balance of power</li> <li>• View nuclear weapons as means of security</li> </ul>	Japan

Advocates are states with leadership that is satisfied with the accord's distribution of power and view the treaty as an asset. They may believe the agreement has the long-term potential to enhance their national status or security. Even if advocates have concerns about subjects like access to civilian nuclear energy technologies, the accord's benefits outweigh these reservations. For advocates, there seems to be little reason not to endorse a treaty that locks in a favorable distribution of power, regardless of the eventual requirement to legally forswear nuclear weapons. In many cases, advocates believe that multilateral nuclear arms control will constrain their regional rivals, which is well worth the costs

of signature. If those rivals refuse to sign, however, treaty advocates might not rush to push forward with ratification.

Subordinates, by contrast, are states that express consternation with the balance of power and principles a treaty would formalize, but they lack sufficient autonomy to oppose the accord. Such states usually rely on a powerful third-party patron for their security. In cases where the security sponsor demands that their client sign a treaty, subordinates will be unable to resist their patron's wishes. Subordinates fall in line and endorse the distribution of power supported by their protector. On paper, subordinates may appear observationally equivalent to advocates due to their usually rapid signature of treaties. Determining when a state is one type or the other requires not just analysis of treaty negotiation records, but importantly, documentation of domestic discussions and correspondence between the state and its interlocutors. This dissertation assesses such evidence.

Non-signatories are states unwilling to sign a treaty that involves forswearing nuclear weapons due to deep concerns about its implications for the balance of power. Agreements that divide the world into groups of “nuclear haves” and “nuclear have-nots” are particularly likely to draw resistance from advanced nuclear states. Arms control treaties do not solely entail prohibitions on weapons systems. The text of a treaty or a powerful state's attempt to enforce its provisions may create barriers to acquiring dual-use civilian nuclear technologies—from reactors, to enrichment and reprocessing (ENR) facilities, to components for carrying out PNEs. Leaders of non-signatory states see restrictions on military and civilian nuclear capabilities as undesirable obstacles to national standing or



security. Non-signatories can be classified into one of two different types: *status dissenters* or *weapons dissenters*.

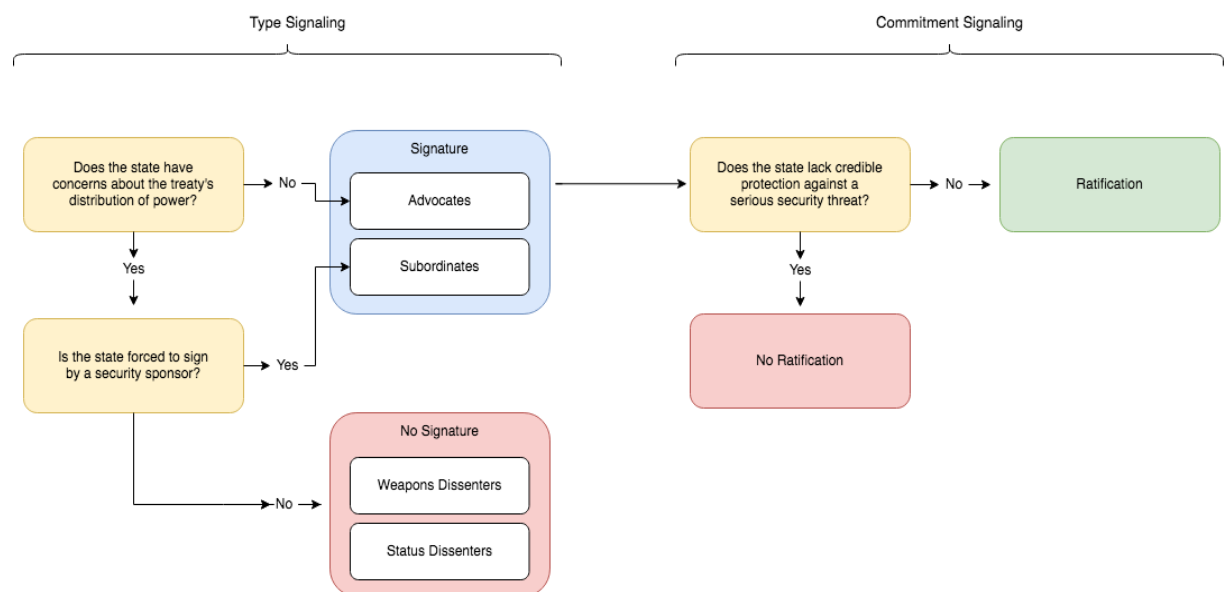
The central objection of status dissenters is that nuclear treaties are discriminatory instruments that will deny them access to nuclear weapons or energy technologies. Sagan (1996/1997) and Hymans (2006) contend that nuclear weapons can bring prestige to a country that enhances perceptions of its power and technological prowess. To status dissenters, treaties that forbid most states from having nuclear weapons, but not others, divide the world into unequal factions and freeze the distribution of power. For many status dissenters, this is a matter of principle rather than an actual interest in the bomb. Likewise, early in the nuclear age, there were global perceptions that civilian nuclear energy would revolutionize and elevate societies. Treaties that may pose restrictions on obtaining such capabilities will not appeal to status dissenters. Multilateral nuclear arms control has the potential to cause advanced nuclear states to believe they suffer from what Renshon (2017) terms a “status deficit.” States with this view will signal their dissatisfaction by not signing onto treaties.

Weapons dissenters are the other type of non-signatory. Unlike status dissenters, the emphasis of these states is on security rather than prestige. Weapons dissenters usually have enduring rivalries that result in leaders considering nuclear proliferation as a source of national defense. Considering the nuclear option is not tantamount to a decision to pursue the bomb. States that are weapon dissenters are likely to study the feasibility of autonomously developing nuclear weapons. They will not sign treaties until their leadership has ruled out

nuclearization in principle. States that refuse to sign agreements because they would disarm their nuclear-armed security sponsors are also weapons dissenters that focus on the bomb as a means of security.

Countries have multiple interests. Leaders could theoretically object to arms control based on both status and weapons rationales. It is essential to evaluate declassified documents and other materials to assess drivers of national behavior and decision-making. When both motivations are present, credible military concerns about national survival unsurprisingly supersede status considerations. Types can nonetheless change over time.

**Figure 2: Two-Step Process of Entering into Arms Control**



As Figure 2 (with signature on the left-hand side) depicts, shifting types are fundamental to non-signatories becoming signatories over time. These changes only occur through transformation of national ambitions and perceptions regarding a treaty's balance of power. Both status dissenters and weapons dissenters may eventually sign treaties as subordinates or advocates. The former

occurs when a non-signatory is unable to resist overwhelming pressure to sign by its patron. The latter transpires after increases in status or security, or decisions that nuclear weapons and nuclear energy will not help achieve national objectives. In this dissertation, I use process tracing to reconstruct states' decision points concerning the NPT and the CTBT. For advanced nuclear states that had much to lose, I identify changing national positions and causal mechanisms enabling them to come to terms with the new balance of power.

### Commitment Signaling and Treaty Ratification

Following an executive signing a multilateral nuclear arms control treaty on behalf of a state, officials may consider ratification. This action represents a more extensive commitment to legally forswearing nuclear weapons. Ratification is costlier than signature because it ties a state's hands with military capability restrictions and monitoring and verification. I refer to this costlier signal as a *commitment signal*.

Commitment signaling represents a more credible commitment than does signaling of a state's type. States incur several costs of ratification they would be unlikely to accept if they had no intention of complying with the treaty. These costs are of both an ex-ante and ex-post character. The former include a sovereignty cost due to intrusive verification, whether through IAEA safeguards, on-site inspections (OSI), or required technology declarations. The latter include the fact that the state is legally forswearing nuclear weapons that could contribute to its survival. Withdrawing, which I discuss below, is particularly costly after

ratification due to what it may reveal or suggest about state intentions. Accordingly, ratification of multilateral arms control treaties both screens and constrains.

As with any treaty, there will always be potential cheaters. However, history bears out that costs associated with ratification sharply reduced incidents of cheating and non-compliance (Müller and Schmidt 2010; Herzog, Ko, and Lee 2021). Additionally, ratification has more firmly set the course of nuclear policy than signature. Countries like Japan, South Korea, and West Germany finally abandoned considering the bomb after ratification, not signature.

Still, the gravity of agreeing to forgo weapons that would greatly enhance state power, security, and survival prospects can result in debates lasting many years. Even leaders who sign arms control treaties may not be prepared to pursue ratification. Of course, ratification sometimes follows immediately or shortly after signature. At other times, it never follows at all. Understanding the motivations behind why states quickly ratify after signature, delay ratification after signature, or decline to ratify after signature is critical to explaining how nuclear arms control regimes gain members.

The historical record reveals two types of ratification debates on multilateral nuclear arms control: *protracted* and *pro forma*. While domestic political actors participate in these debates, neither outcome emerges purely from the balance of party politics and veto players. Instead, discussions focus on substantive matters of the national interest or procedural matters.

As illustrated on the right-hand side of Figure 2, serious security threats have determinative impacts on state willingness to ratify multilateral nuclear

arms control treaties. Such threats emanate from countries with greater relative military power than—or a history of bellicose relations with—the state considering ratification. The theoretical logic is similar to strategic interaction models of proliferation developed by Monteiro and Debs (2014) and Debs and Monteiro (2017). When a state lacks serious security threats or has credible third-party protection against its rivals, the end outcome is a pro forma debate and ratification. But when a state lacks—or has reason to question—credible third-party protection against serious security threats, a protracted ratification debate about national defense and survival will result. Other considerations from the literature, like treaty-contingent benefits and norms, certainly may appear in ratification debates. My comparative case studies show that security was the most essential and necessary condition for facilitating commitment signaling.

There are three main reasons why a state that initially refuses to ratify a treaty may eventually decide to deposit its instrument of ratification. First, ratification becomes more palatable when threats to state survival dissipate. Treaties of peace and friendship, confidence-building measures, or the adversary facing a military defeat can all make ratification possible. Second, states have incentives to pursue ratification if they gain credible protection against serious security threats. Support from a powerful security sponsor, often coupled with forward-deployed conventional or nuclear forces and joint operational planning, attenuates the severity of threats. Capability limitations then become less harmful to a state's prospects for survival. Third, a patron can threaten abandonment if its protégé does not ratify a treaty. Coercive threats force the protégé to weigh the

benefits of non-ratification versus protection from its security sponsor, thereby increasing ratification chances.

Legally forswearing nuclear weapons is a different dependent variable than nuclear proliferation. A state decision to refrain from pursuing the bomb at a given time is not the same as legally closing the door on the nuclear option and accepting the ex-ante and ex-post costs of commitment signaling. Leaders think hard about ratification decisions, and long-term perceptions of patron credibility and rival intentions frequently matter more than “objective” material realities. Of course, ratification decisions are not entirely independent from a state’s initial type signaling behavior. Former weapons dissenters will almost inevitably have more difficulty legally forswearing nuclear weapons than their counterparts from the other three initial state types.

While protracted ratification debates focus predominantly on security, pro forma debates focus mainly on procedural issues. The scarcity of threats facing the states places ratification in the national interest. References to endorsing the status quo and the norms of the treaty generally populate the transcripts of pro forma ratification discussions. Countries that do not have civilian nuclear energy programs or interest in nuclear weapons—those falling outside the scope of the dissertation—are the most likely to have pro forma ratification debates. But recalling my interview with the Tongan diplomat, ratification also depends on government capacity and priorities. Pro forma discussions may happen years after the executive signs a treaty. Determining the nature of a

ratification debate requires evaluating the substantive content of discussions rather than simply examining timelines.

In sum, without assurances of national survival, states lack incentives to provide a commitment signal of their legal nuclear forbearance. Uncertainty about the security costs and benefits of arms control can loom over ratification discussions, irrespective of state motivations for signing a treaty. That is why the historical record is littered with cases of advanced nuclear states waiting years between signing and ratifying. Much of the impetus for delays often stems from the difficulty of backing out of treaties post-ratification due to costs imposed by the international community.<sup>32</sup>

International treaties usually contain withdrawal clauses in their text (Koremenos, Lipson, and Snidal 2003; Koremenos and Nau 2010). Negotiators include these provisions to mitigate states' uncertainty about the future (Koremenos 2005). Multilateral nuclear arms control treaties are no exception. For example, Article X of the NPT and Article IX of the CTBT contain identical language stipulating that a state may withdraw if "extraordinary events, related to the subject matter of this Treaty, have jeopardized the supreme interests of its country." Yet, withdrawals of this type are rare in the domain of nuclear diplomacy. The international community usually interprets this behavior as a strong indicator of a state's intent to violate the accord's guidelines.

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<sup>32</sup> On the costs of treaty withdrawal see: Helfer 2005.

States that abrogate their nuclear treaty commitments may face stiffer punishments for their behavior than their counterparts who were never parties to the agreements. After North Korea's 2003 withdrawal from the NPT and subsequent nuclear test in 2006, the UN Security Council (UNSC) levied harsh economic sanctions against Pyongyang.<sup>33</sup> On the other hand, India and Pakistan had never been NPT members when they tested nuclear weapons in 1998, but each received only verbal condemnation from the same body.<sup>34</sup> Cheating is also costly, as even the mere suspicion of violating commitments to nuclear arms control invites a spate of possible punishments in the form of shaming, technology denial sanctions, counterproliferation strikes, and even invasion and regime change (Litwak 2007; Miller 2014; Debs and Monteiro 2017; Whitlark 2017).

The virtual finality of ratification and these attendant consequences may sow the seeds of doubt among governments in conflict-prone regions. Even states with longstanding security sponsors may hold out on ratifying such treaties until they receive more robust assurances. On this point, Downs, Rocke, and Barsoom (1996) maintain that treaty compliance is usually high because states select into agreements they intend to abide by in the first place.

Though the question of nuclear treaty withdrawal lies outside this dissertation's immediate focus, my theory does shed some light on North Korea's

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<sup>33</sup> See: S/RES/1718. And for a detailed discussion of North Korea's decision to withdraw from the NPT see, e.g.: Litwak 2007.

<sup>34</sup> See: S/RES/1172.



NPT withdrawal. By invoking its “supreme interests,” Pyongyang became the first and only state to leave a multilateral nuclear arms control treaty. The theory would predict that potential proliferators lacking credible protection against serious security threats will withdraw when the benefits of pursuing prohibited nuclear technologies outweigh the costs of punishments. If the consequences of withdrawing were similar to cheating, why then would a state not just gamble and covertly violate the treaty? The answer is that withdrawal introduces strategic ambiguity about a state’s capabilities that may well bolster its ability to deter foes.

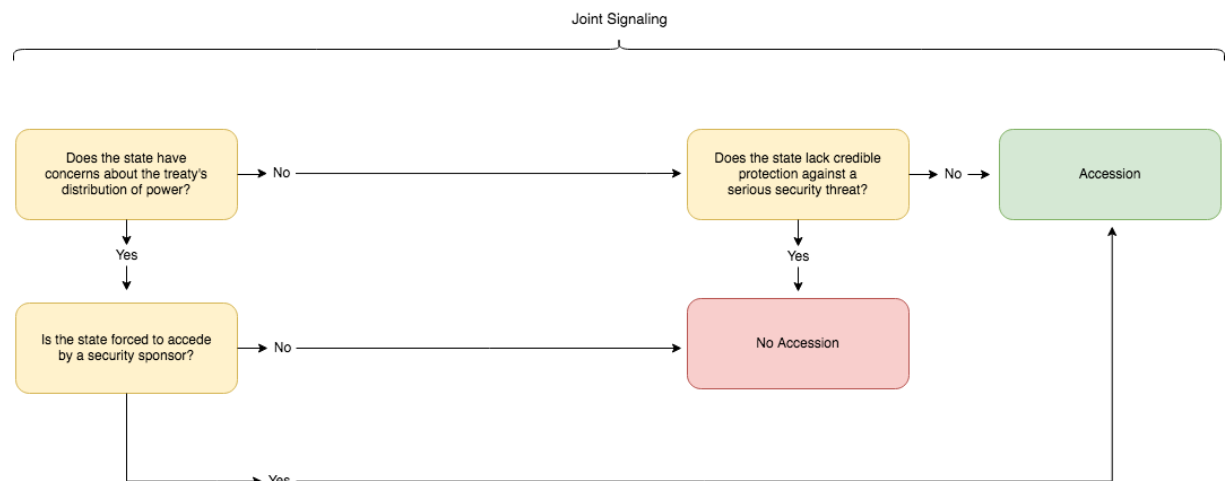
#### Joint Signaling and Treaty Accession

As discussed above, once a multilateral nuclear arms control treaty has entered into force, states may no longer sign it. State signatories have the option of ratification, but states that have not signed may only accede to formalize their arms control participation. Accession is, therefore, what I term a *joint signal*. The necessary conditions for both signature and ratification must be satisfied for states to accede. While accession’s causal logic appears slightly different from the two-step process of signature and ratification, it is a related event. Figure 3 highlights national decision-making processes that allow for treaty accession.

An accession is hardly a rare event. A total of 76 of the 191 States Parties to the NPT became members through accession rather than via signature followed by ratification. In practice, three types of states have acceded to treaties. First, states that do not view the treaty as a priority before its entry-into-force

oftentimes miss the window for signature and pursue accession as an alternative pathway to joining. Second, newly independent states that did not exist before the treaty opened for signature—like the post-Soviet states or former colonial territories—find themselves in a similar position vis-à-vis the treaty. Third, and most relevant to this dissertation, emerging nuclear powers that were status dissenters or weapons dissenters at the time of entry-into-force must also decide between accession and non-accession.

**Figure 3: One-Step Process of Entering into Arms Control**



Because accession carries the same legal weight and obligations as ratification (Aust 2013), it can be a difficult choice for advanced nuclear states to accept capability restrictions. Accession, like ratification, is the final step in legally forswearing nuclear weapons. A state issues a joint signal equivalent to both type and commitment signaling by acceding. Its leaders are accordingly making definitive statements about their views on the treaty's distribution of power and their level of credible protection from serious security threats. While politicians may

not conceptualize accession in this manner, national conversations about acceding to agreements are likely to involve a mixture of discussion about treaty principles and security threats. There are some cases where states delayed their accession for reasons related to type signaling considerations, and there are other cases where commitment signaling considerations were pivotal. Only the achievement of both necessary conditions allows for joint signaling to occur.

### Toward Arms Control and Generalizability

This chapter laid out a process-based theory of why advanced nuclear states legally forswear the bomb by signing and ratifying multilateral nuclear arms control treaties. The theory improves on the existing literature that can oversimplify treaty behavior. It does so by pointing to differential motivations underlying state decisions at each step of the process. And by acknowledging that arms control decision-making involves multiple considerations, some more prominent than others, the theory subsumes past scholarly endeavors. These studies may offer accurate assessments of individual state decisions for signature or ratification. But my theory, however, is broadly generalizable due to its emphasis on process.

Signing a treaty is a type signal related to approving or disapproving of the balance of power codified by a nuclear accord. The event of signature can arise from treaty advocacy or subordination to superpower pressure. Ratification is a commitment signal that occurs when states either have an absence of serious security threats to their national survival or have credible third-party protection from

such threats. Accession is a joint signal encompassing the motivations for both type and commitment signals.

The argument's logic points to three theoretical lessons why states may accept the constraints of legally forswearing nuclear weapons. First, having few threats among one's neighbors increases the chances of embracing a nuclear arms control agreement and its capability limitations. A state's maintenance of a powerful military, or its location in a region with strong external sovereignty norms, contributes to this propensity. Second, states with reliable allies are more likely to accept multilateral nuclear arms control than states that lack them. Protection from threats makes states more likely to sign onto initiatives due to their comfort with the balance of power and to formalize their commitment through ratification. Finally, secure access to the civilian nuclear market strengthens a state's willingness to participate in treaties. Suppose a government views civilian nuclear technologies as stepping stones to prestige and enhanced presence on the world stage. In that case, it will have great difficulty accepting treaties perceived to be obstacles to this future.

The logic of type, commitment, and joint signaling have generalizability to other areas of international affairs. Entry into multilateral treaties is a process that involves different levels of commitment. Regardless, legally forswearing nuclear weapons has unquestionable implications for state survival that are likely not present in development banking, election monitoring, or other

areas. Additional research could shed light on the unique rationales for treaty decision-making in these domains.

While my theory focuses on signals sent by states, signaling is a multi-party phenomenon involving a sender and recipient audiences. A key consideration for arms control and avenue for future research is how allies, adversaries, and non-aligned states interpret these signals. Because signature and ratification are binary outcomes but encompass multiple state types, misperception can be consequential. For example, a status dissenter and a weapons dissenter may be observationally equivalent to a third-party. The efficacy of signaling is outside the scope of this dissertation, but the potential for misperception is a key policy implication of my theory.

Lastly, the theory diverges from past findings in non-nuclear areas of global affairs indicating that—in many cases—joining international agreements is cheap talk that confers benefits (Vreeland 2008; Hyde 2011). These studies often predict quick near-universality of membership as a result. The signaling logic outlined in this chapter is still present, but rationales for doing so are not the same as those involved in renouncing the nuclear weapons option. I often observe considerable lag in phases of participating in multilateral nuclear arms control because neither signature nor ratification is cheap talk. Both are costly, but ratification is costlier: It is the way of saying “Never” to nuclear arms.

### **Chapter 3 – Egypt: Nuclear Hedging and Instrumentalist Arms Control**

Egypt presents numerous puzzles for understanding why states legally forswear nuclear weapons by signing and ratifying multilateral arms control treaties.<sup>35</sup> They span the tenure of every president from Gamal Abdel Nasser to current leader Abdel Fattah Al-Sisi. For instance, why did Nasser sign the NPT the day it opened for signature in 1968? Nasser had expressed interest in nuclear weapons and suffered a humiliating defeat to Israel in the Six-Day War just a year earlier. Why then, after signing the NPT, did Nasser decline to pursue its ratification in the Egyptian parliament? What changes caused his successor, Anwar Sadat, to reverse course in 1981 despite Israeli acquisition of nuclear weapons and Jerusalem's refusal to join the treaty?

NPT ratification is hardly the end of Cairo's complicated nuclear history. The next president, Hosni Mubarak, signed the CTBT just weeks after it opened for signature in 1996. Yet, he delayed ratification of the treaty banning nuclear tests, although the NPT already prohibited Egypt from proliferation.<sup>36</sup> Presidents Mohamed Morsi and Al-Sisi followed suit, with Egypt remaining outside the CTBT to this day.

Figure 4 shows that Egypt is an ideal country of study for this dissertation's research questions. There was a nearly 13-year gap between its signature and ratification of the NPT, and the parliament has not ratified the

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<sup>35</sup> Egypt and Syria formed the sovereign state of the United Arab Republic (UAR) from 1958 until 1961 when Syria left the union. Regardless, Egypt maintained the UAR name until 1971. I refer to the state only as "Egypt" in this chapter.

<sup>36</sup> See: NPT, Art. II.

CTBT—signed 25 years ago by Mubarak. Throughout the decades under consideration, Egypt has always had an autocratic regime. Leaders who sign treaties could order ratification with relative ease. The associated signature–ratification time-lags suggest differential motivations underlying these decisions.

**Figure 4:** Timeline of Egyptian NPT and CTBT Diplomacy

1968	July 1: NPT opens for signature, Egypt signs
1970	March 5: NPT enters into force
1981	February 26: Egypt ratifies NPT
1996	September 24: CTBT opens for signature
1996	October 14: Egypt signs CTBT

While the existing literature says little about Egypt and the CTBT, numerous scholars have studied Cairo’s path toward the NPT. An Egyptian desire to constrain Israel is the dominant explanation for Nasser signing the NPT (Einhorn 2004; Spaniel 2019). Ratification under Sadat is more ambiguous. The conventional wisdom holds that Egypt eventually ratified the NPT to obtain nuclear power reactors (Kats 1985; Barnaby 1989; Solingen 2007). However, even today, Egypt has never operated a nuclear power plant on its territory. This chapter parts ways with the literature’s emphasis on these treaty-contingent benefits, showing that security considerations were paramount in Egypt’s NPT ratification. To do so, I analyze a variety of UN treaty negotiation documents, declassified diplomatic communications, and other historical accounts.

The evidence confirms that Nasser was willing to signal Egypt’s type as a treaty advocate by signing the NPT in 1968. As the typology depicted in Table 3 in Chapter 2 explains, advocates accept the distribution of power codified by a

treaty and view the agreement as a long-term asset. Nasser's rationale for signing was instrumental: to support a treaty Arab states believed would militarily constrain Israeli nuclear ambitions. Cairo also had indications its own nuclearization would be technically challenging and bear negative diplomatic consequences. Thus, it was not difficult for Egypt to provide a type signal of its intent to forgo the bomb.

But when Israel failed to sign, Egypt delayed NPT ratification for over a decade. Only after the Israeli security threat dissipated through the Camp David Accords and Sadat's separate peace with Jerusalem could Egypt offer a firmer commitment signal. While Nasser's type signal created an expectation of Egyptian compliance with the NPT, Sadat's commitment signal formalized that obligation. It is true that other motivations, including a desire to obtain civilian nuclear energy, contributed to NPT ratification in 1981. However, security considerations predominated in the decision to legally forswear nuclear weapons that could help ensure national survival. Mubarak's decisions to type signal as an advocate in the CTBT context in 1996 and subsequently withhold a commitment signal conform to a similar logic. He aimed to pressure Israel, without success, into multilateral treaties to roll back Jerusalem's nuclear arsenal. Egypt will almost certainly be a CTBT non-party until Israel reduces its atomic footprint in the Middle East.

This chapter explains Egyptian nuclear diplomacy on the NPT and the CTBT in five sections. First, I chronicle the early history of Egypt's rivalry with Israel and the beginning of its nuclear program. Second, I show how these elements affected decisions regarding the negotiation and signing of the NPT. Third, I demonstrate through the historical record how motivations for ratifying the



treaty differed from those for signing it. Fourth, I expand my analysis to the theory's applicability to Egyptian behavior on the CTBT. Finally, I briefly summarize the findings and conclude the chapter.

### Rivalry with Israel and the Early Nuclear Program

Studies of enduring rivalries trace enmity between Egypt and Israel to 1948, the year of the latter's founding (Goertz and Diehl 1993; Maoz and Mor 1996; Stein 1996). In 1947, Egypt, Iraq, Jordan, Lebanon, and Syria voted against the UN plan to create the state of Israel on the territory of the former British Mandate of Palestine. Shortly after Israeli independence, these countries joined with Saudi Arabia and Yemen to launch an attack on the new state. Despite their massive troop advantage, the Arab states lost a humiliating defeat that also involved fighting in Southern Lebanon and Egypt's Sinai Peninsula (Morris 2008; Bleek 2010a; Spaniel 2019). The conflict solidified the Egypt–Israel rivalry, which would later take on nuclear dimensions.

The Egyptian defeat also had lasting ramifications for the country's politics. It further discredited King Farouk—who depended on British support—among nationalist military officers, including Lieutenant Colonel Gamel Abdel Nasser and General Mohamed Naguib. Their Free Officers Movement overthrew Farouk in a 1952 coup d'état,<sup>37</sup> with Naguib becoming the first president of the Arab Republic of Egypt and Nasser as his prime minister. Nasser would supplant

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<sup>37</sup> See: "The Military Coup in Egypt," July 23, 1952, Office of Current Intelligence, Central Intelligence Agency (CIA) Freedom of Information Act (FOIA) Electronic Reading Room, General CIA Records, Doc. CIA-RDP91T01172R000200280003-8.

Naguib in 1954, pursuing a foreign policy of Pan-Arabism and hostility to Israel until his death in 1970 (Stephens 1971; Aburish 2004; Gerges 2019).

The Egyptian nuclear program was born against this backdrop. After U.S. President Dwight D. Eisenhower's famous Atoms for Peace speech,<sup>38</sup> Congress passed the Atomic Energy Act in 1954, and the United States began negotiating civil nuclear cooperation agreements. The Egyptian government "showed immediate interest in nuclear energy" partnership with the United States (Selim 1982, p. 135). In 1954, Nasser formally initiated Cairo's nuclear program, with the creation of the Atomic Energy Authority (AEA) following a year later (Solingen 2007).

Prior to the program, Egypt had fewer than 1,400 annual university graduates in the sciences, a minimal number for a country of over 20 million people (Bhatia 1988, p. 49). The nuclear program helped modernize Egypt's scientific research and education infrastructure. Cairo University soon offered graduate coursework in nuclear physics (Selim 1982), and a new bilateral cooperation agreement with Washington initiated construction on a radioisotope laboratory at the National Research Center at Inshas in 1956 (Selim 1996). Such activities continued into the late 1950s. Egypt sent its young nuclear scientists for training in India, the Soviet Union, and the United States. Cairo signed technical agreements with these countries alongside others like Norway and Yugoslavia (Walsh 2001).

By the end of the decade, Egypt seemed well on the way to a successful nuclear energy program. It had a developing base of human capital,

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<sup>38</sup> See: Dwight D. Eisenhower, "Atoms for Peace" (470th UNGA Plenary Meeting, New York, December 8, 1953), <https://www.iaea.org/about/history/atoms-for-peace-speech>.

while construction at Inshas was underway on the radioisotope laboratory with the Americans and a two-megawatt light water reactor (LWR) for research with the Soviets (Einhorn 2004). Furthermore, it had access to raw materials, as “a comprehensive aerial and geological surveying program” located uranium deposits in the north of the country (Selim 1982, p. 137). At this time, there were no multilateral nuclear arms control treaties to restrict Egypt’s nuclear activities.

Publicly, civil-scientific pursuits appeared to motivate Nasser’s broad support for the nuclear enterprise. AEA Secretary General Ibrahim Hilmy Abdel Rahman actively promoted peaceful nuclear power generation and nuclear medicine (Solingen 2007). Mohamed Hassanein Heikal, Nasser’s long-time friend and policy advisor, maintained that the president believed nuclear energy represented a path toward Egypt’s rapid economic development and national prestige. Heikal recalled Nasser stating emphatically, “We missed out in the steam age, and also in the electricity age, but we ought not allow ourselves under any circumstances to be left behind in the atomic age (qtd. in Walsh 2001, p. 145).” In retrospect, it seems unlikely that the Egyptians would embrace any agreement that would limit their development of atomic energy. However, the nuclear fuel cycle involves dual-use technologies with civilian and military applications. It is this latter context that has primarily shaped Egypt’s participation in nuclear diplomacy.

Historical accounts indicate Nasser prioritized civilian uses of nuclear energy but hedged in the military domain.<sup>39</sup> Despite reports that Egypt declined to

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<sup>39</sup> Narang (2016/2017, p. 134) codes Egypt as a “hard hedger” from 1955–1980, indicating Cairo “attempt[ed] to become a threshold nuclear state with many of the pieces in place for a functional weapons program (p. 118).”

buy fissile materials from unscrupulous actors in the mid-1950s (Walsh 2001; Rublee 2009), Nasser's regime recruited former Nazi nuclear and missile scientists to work in Egypt in the 1950s and 1960s (Feldman 1997).<sup>40</sup> Rahman himself reported receiving guidance in 1955 that "the focus should be on peaceful applications, but that the program should be organized in a way that would preserve a military option (Walsh 2001, p. 146)." When Rahman left the AEA in 1958 to pursue other responsibilities in the government, his replacement was indigenous proliferation advocate Salah Hedayat. According to Hedayat, Nasser ordered the onset of secret nuclear efforts before Egypt was ever aware of Israel's activities at Dimona. Solingen (2007, p. 234) thus notes that a "future threat" must have motivated what she labels a "preemptive program."

Yet, nuclear hedging need not arise from nuclear threats alone. It is important to recall that Nasser was deeply moved by Egypt's defeat in the 1948 war with Israel and faced aggression from Israel, France, and the United Kingdom during the 1956 Suez Crisis (Kyle 1991; Kissinger 1994; Nichols 2012). Nasser had nationalized the British-run Suez Canal, leading London and Paris to support an Israeli invasion of the Sinai Peninsula with the goal of regime change. Pressure from the United States, the UN, and the Soviet Union—including a nuclear threat from Moscow—foiled the plan. Nasser clearly also had reasons to pursue nuclear weapons to deter conventional attacks. It is unlikely that the president would have legally forsworn nuclear weapons in the 1950s.

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<sup>40</sup> Israel thwarted these plans with a large-scale Mossad counter-operation involving "bombings, kidnappings, and assassinations." The efforts were so effective that it became too dangerous for German scientists to work in Egypt by 1964, resulting in a "mass exodus" of those who had come to cooperate (Bahgat 2007, p. 411).

But even as Nasser showed some early restraint toward the military nuclear option, Israel rapidly developed its own program. Prime Minister David Ben-Gurion received cabinet permission to secretly build a 24-megawatt nuclear reactor at Dimona in 1957. Plans to construct facilities for the French-supplied reactor were made shortly after Jerusalem decided to begin the long road to nuclearization (Cohen 1998; Karpin 2006). Such plans were a direct Franco–Israeli response to dissatisfaction at being unable to coerce Nasser in the Suez Crisis (Shaker 1980b). Though Israel denied it was building a reactor (Nashif 1984), Nasser’s intelligence services received worrisome reports in 1959 from Mohamed Ezzat Abdelaziz, an Egyptian physicist at the Argonne National Laboratory outside of Chicago. Abdelaziz claimed Israeli scientists were researching with Americans behind closed doors at the lab’s classified plutonium section—a clear indication of work toward the bomb (Walsh 2001).<sup>41</sup>

Egyptian Vice Chief of Intelligence Amin Howeidy quickly ordered overflight surveillance of the Dimona site and became convinced of a covert nuclear program (Walsh 2001). On December 21, 1961, under international pressure, Ben-Gurion acknowledged the reactor construction while claiming it was exclusively for research and civilian applications. The announcement still raised alarm bells throughout the Arab world. Nasser publicly declared two days later “that if Israel acquired nuclear weapons, Egypt would have to acquire them at any price (Einhorn 2004, p. 45).” He further stated that Israeli proliferation would lead to war “no matter how suicidal for the Arabs (Ruble 2006, p. 556).” In Nasser’s eyes,

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<sup>41</sup> Abdelaziz believed collaboration involved certain American scientists providing aid to Israel atomic efforts, rather than a concerted U.S. government effort (Walsh 2001).

Israeli nuclear weapons presented an existential threat to the survival of Egypt and its Arab compatriots.

Behind the scenes, Nasser led a furious diplomatic engagement effort on nuclear issues from 1961–1965, sending top diplomats to Washington and receiving U.S. officials in Cairo. He pressured the John F. Kennedy and Lyndon B. Johnson administrations to reign in Israel's nuclear ambitions while assuring them of Egyptian plans to remain non-nuclear (Elbahtimy 2018). For their part, his American interlocutors shared “findings from inspections at Dimona, which repeatedly failed to find evidence of reprocessing or other weapons-related activities, in part because of an elaborate deceit and diversion campaign mounted by Israel (Bleek 2010a, pp. 116–117).”<sup>42</sup> Ben-Gurion even told Kennedy that the reactor was for use in nuclear desalination of seawater.<sup>43</sup> Nasser may have been convinced, publicly saying in 1964 he did not believe Israel was pursuing nuclear weapons at Dimona (Solingen 2007). It is unclear if this statement reflected his actual views, given his longstanding distrust of Israel, or an attempt to de-escalate tensions and avoid war.

What is clear, however, is that Dimona led Nasser's government to make forays into obtaining fissile materials to build the bomb. This drive to achieve

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<sup>42</sup> For a U.S. assessment of the civilian nature of work at Dimona see: “State Department Telegram 451 to US Embassy Egypt,” October 22, 1962, History and Public Policy Program Digital Archive, Doc. 123861, RG 59, DF, 884A, 1901/10–2262.

<sup>43</sup> See: “Memorandum of Conversation, ‘President Kennedy, Prime Minister Ben-Gurion, Ambassador Avraham Harman of Israel, Myer Feldman of the White House Staff, and Philips Talbot, Assistant Secretary, Near East and South Asian Affairs,’” May 30, 1961, History and Public Policy Program Digital Archive, Doc. 123839, RG 59, Bureau of Near Eastern and South Asian Affairs, Office of Near Eastern Affairs, Records of the Director, 1960–1963, box 5, Tel Aviv – 1961.

nuclear threshold status or potential nuclearization occurred in spite of his non-nuclear pledges to Washington. Meanwhile, the Soviet-supplied research reactor (ETRR-1) had come online at Inshas in 1961. Still, its two-megawatt capacity and light water moderation meant it would produce insufficient plutonium byproducts for a nuclear device (Shaker 1995). Egypt also lacked reprocessing capabilities to separate plutonium for a bomb from the spent uranium fuel.

The beginning of operations at ETRR-1 led the AEA to increase nuclear activities at the National Research Center. AEA leadership also sought cooperation with Britain, Canada, China, France, the Soviet Union, the United States, and West Germany to build additional facilities. The priority was to acquire heavy water reactors (HWRs) and reprocessing technologies. Together, these capabilities would enable Egypt to forgo uranium enrichment or foreign supply of reactor fuel, relying on its own stocks of natural uranium near Rosetta. This setup would allow for production of a plutonium-based nuclear device (Walsh 2001). While Cairo signed contracts with firms from several countries, issues related to proliferation risks, the Arab–Israeli conflict, and financing ultimately led them all to fall through (Selim 1982; Einhorn 2004).

Nasser's publicly stated intentions rarely deviated from ensuring nuclear parity with Israel. While he told the Americans behind closed doors in the 1960s that Egypt would remain non-nuclear, he also unsuccessfully tried to convince other Arab League members to jointly pursue nuclear weapons (Bar-Joseph 1982; Walsh 2001). And in 1966, he told the British Broadcasting Corporation Cairo was "thinking of developing nuclear weapons to match Israel

(qtd. in Walsh 2001, p. 172).” He also warned of Egyptian preventive strikes if Israel successfully developed the bomb (Shikaki 1985).

The Egyptian government took steps to match Nasser’s rhetoric. AEA scientists, Egyptian diplomats, and Nasser himself repeatedly asked the Soviets, the Chinese, and the Indians for sensitive nuclear assistance in the 1960s (Shikaki 1985; Solingen 2007; Gibbons 2016). Egypt even tried to purchase the bombs themselves from China and the Soviet Union (Walsh 2001; Einhorn 2004; Solingen 2007). In every case, Cairo’s requests were declined and the regime urged to remain non-nuclear or rely on its indigenous knowledge and technology base. As Barnaby (1989, p. 86) notes: “It learnt from bitter experience the rule that existing nuclear-weapon powers are totally committed to keeping nuclear weapons to themselves; the last thing they want to see is an expansion of the nuclear club.” The Soviets ultimately offered vague security assurances to Egypt against an Israeli bomb, though Nasser found these commitments lacking in credible protection (Shikaki 1985; Khan 2002; Spaniel 2019).<sup>44</sup>

Despite Egyptian interest in the bomb, efforts to proliferate declined sharply after Israel defeated Egypt, Iraq, Lebanon, Jordan, and Syria in the Six-Day War of June 1967. Nasser and his Minister of Defense Abdel Hakim Amer had mobilized troops in the Sinai Peninsula as border disputes drove tensions between Israel and Syria (Oren 2002; Laron 2017; Fahmy 2020). While Egyptian military documents indicate Nasser sought to deter Jerusalem from attacking a fellow Arab state (Elbahtimy 2018), the move triggered an Israeli preemptive strike. The Israeli

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<sup>44</sup> For this reason, Debs and Monteiro (2017, p. 80) code Egypt as a “loose ally” of the USSR with legitimate reasons to doubt protection offered by its patron.



Defense Forces “practically demolished the entire Egyptian airforce in the first few hours (Joshi 2000, p. 2104).” Israel won a stunning victory and occupied the Gaza Strip, the West Bank, the Golan Heights, and Egypt’s Sinai Peninsula.

In an interview with historian Avner Cohen, former U.S. National Security Advisor Walt Rostow recalled that Israeli intelligence feared preventive strikes threatened by Nasser.<sup>45</sup> In the weeks before the conflict, Egyptian spy planes conducted reconnaissance over Dimona. However, Elbahtimy (2018) found no archival evidence of nuclear motivations underlying the mobilization of troops in the Sinai.<sup>46</sup> In fact, the flights were unauthorized sorties by young Egyptian pilots who sought payback against Israel for invading their airspace (Cooper 2016). Whether misperceptions over these missions truly altered Israeli intelligence assessments and prompted the Six-Day War requires further investigation.

Regardless, the nuclear situation in the Middle East was forever changed. Cohen (2007) argues that tensions leading up to the war prompted Israeli Prime Minister Levi Eshkol to make the *final* decision to assemble a bomb, just one year before the NPT opened for signature.<sup>47</sup> Before then, there may have been

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<sup>45</sup> “Interview with Walt Rostow by Avner Cohen,” 1993, History and Public Policy Program Digital Archive, Doc. 118055.

<sup>46</sup> In May 1966, Soviet Prime Minister Alexei Kosygin had visited Cairo to meet with Nasser. He assured the Egyptian leader: “Israel is not in a position to be able to make a nuclear bomb and launch a nuclear attack against the Arab countries. Therefore, it is not necessary for the UAR to begin nuclear tests or launch a preventive war on Israel.” [See: “Report from the Hungarian Embassy in Cairo on Kosygin’s visit in the UAR,” May 26, 1966, History and Public Policy Program Digital Archive, Doc. 122514, MOL XIX-J-1j SZU/IV-10/003348/1966 104.d. Trans. András Bocz].

<sup>47</sup> Rabinowitz (2014) discusses Israeli efforts in 1966 to carry out subcritical tests using high explosives and fissile materials. However, subcritical experiments fall short of having an assembled nuclear device. To date, no conclusive evidence has surfaced supporting claims of a sustained chain reaction. Israeli espionage within the U.S. nuclear establishment, and the type of cooperation

a possibility that Israel remained a threshold state. Meanwhile, Nasser froze his nuclear program under the war's economic strains and a need to rebuild the Egyptian conventional military (Walsh 2001; Rublee 2006; Solingen 2007; Gibbons 2016). He did this instead of redoubling nuclearization efforts.

Egypt had abjectly failed to counter the Israeli nuclear program. After the Six-Day War, it became clear Nasser could not credibly threaten to stop an Israeli bomb. The AEA had also achieved only minor progress in the nuclear field, leading Nasser to cut its funding after the war. Why had Egypt, with such a pronounced security threat, made dismal strides to the bomb? Three possibilities immediately come to mind given the evidence of the case. Each has merit, but I find the technical and managerial ineptitude explanation most persuasive.

First is a series of sharp disagreements and management culture tensions between scientists, civilian officials, and the military (Walsh 2001; Einhorn 2004). In summarizing the Egyptian program, Walsh (2001, p. 172) writes: "There was no equivalent to the Manhattan Project [...] Instead, there was drift, delay, and missed opportunities." This analysis is in line with scholarship indicating certain types of autocratic states and command economies may face great difficulty proliferating (Hymans 2012; Montgomery 2013; Braut-Hegghammer 2016). It is also the most compelling of the three explanations. In 1966, Egypt was among

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allegedly observed at Argonne by Mohamed Ezzat Abdelaziz, likely allowed Jerusalem to be confident in its weapon designs without conducting a full-fledged nuclear test.

countries the U.S. intelligence community assessed “would need substantial aid in virtually all phases of a nuclear program” but was unlikely to receive such aid.<sup>48</sup>

The second possible explanation is fear of a preventive strike given Israeli military capabilities, particularly in the airpower domain. As Debs and Monteiro (2017, p. 9) state: “Nuclear weapons may well be the weapons of the weak, but the weak (and unprotected) cannot get them.” Egypt did lack a credible security guarantee from a powerful patron against Israeli aggression. Given the remarkably limited progress of the AEA, however, there is no evidence indicating that fear of Israeli counterforce strikes deterred Cairo from building the bomb.

The third line of reasoning is that perhaps Nasser never actually wanted the bomb and instead sought threshold state status and nuclear hedging. Interviews by Walsh (2001) and Rublee (2006) with former Egyptian officials suggest there was never a written plan to develop nuclear weapons or a budget specifically allocated to this objective. Recent scholarship also indicates that possession of a “virtual arsenal” may allow for deterrence or compellence of rivals with veiled threats of nuclear proliferation (Fuhrmann and Tkach 2015; Fuhrmann 2017; Volpe 2017; Herzog 2020). Nasser issued many such threats. Yet, this explanation is also unpersuasive since Egypt stopped short before making enough progress in the nuclear field to have a legitimate hedge.

Regardless of the precise reason, or combination of reasons, for Egypt’s failure to proliferate, the Six-Day War marked a definitive turning point in

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<sup>48</sup> See: “National Intelligence Estimate, NIE 4-66, ‘The Likelihood of Further Nuclear Proliferation,’” January 20, 1966, History and Public Policy Program Digital Archive, Doc. 116887, Lyndon B. Johnson Library, p. 11.

its nuclear policy. To stop the Israeli bomb, Nasser needed a new strategy. Multilateral nuclear arms control, therefore, became the Egyptian vehicle to contest Jerusalem's nuclear weapons. Egypt faced great difficulty obtaining its own bomb and would consider legally forswearing nuclear weapons if arms control would militarily constrain Israel.

### Negotiating and Signing the NPT

As conflict and confrontation between Egypt and Israel were taking place, the Cold War superpowers were colluding on nuclear nonproliferation (Coe and Vaynman 2015). In December 1961, the UN General Assembly (UNGA) voted to establish the ENDC.<sup>49</sup> The ENDC met in Geneva and included Egypt among its members. It sought to achieve the principled objective of “general and complete disarmament under effective international control.” While non-aligned members wanted to curtail proliferation and the arms race, the United States and the Soviet Union aimed to use the body to limit the nuclear-armed club. A year before the ENDC's establishment, Kennedy had warned: “There are indications because of new inventions, that 10, 15, or 20 nations will have a nuclear capacity, including Red China, by the end of the Presidential office in 1964.”<sup>50</sup>

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<sup>49</sup> See: A/RES/1722(XVI). The 18 member states were: Brazil, Bulgaria, Burma, Canada, Czechoslovakia, Ethiopia, France, India, Italy, Mexico, Nigeria, Poland, Romania, the Soviet Union, Sweden, the UAR (Egypt), the United Kingdom, and the United States. The French seat remained open at the talks due to Paris's objections to U.S.–Soviet collusion on the treaty's provisions.

<sup>50</sup> John F. Kennedy (Presidential Debate with Richard M. Nixon, Third Joint Radio–Television Broadcast, ABC News, Hollywood, CA and New York, October 13, 1960), <https://www.jfklibrary.org/archives/other-resources/john-f-kennedy-speeches/3rd-nixon-kennedy-debate-19601013>. Kennedy made this remarkable claim during a debate in his successful campaign to defeat Richard M. Nixon for the presidency. At that point, only four states—France, the Soviet Union, the United Kingdom, and the United States—had developed nuclear weapons.

Moscow and Washington each submitted draft proposals for disarmament to the ENDC in 1961 and 1962, respectively (Harries 2014). Predictably, the non-aligned states, including Egypt, were skeptical of these first proposals. Indeed, each superpower offered an unrealistic plan for immediate nuclear disarmament to discredit the other's leadership when they rejected it. Domestic political support for these initiatives was also lacking, and the Cuban Missile Crisis cast further doubts on the sincerity of such efforts.

But in 1965, the Johnson administration began reinvigorated outreach to Soviet Premier Leonid Brezhnev on a hypothetical nonproliferation treaty. Brezhnev and his advisors bought into the treaty for two primary reasons: U.S. assurances to cancel the Multilateral Force (MLF) and the status benefits of dividing the world between NWS and NNWS (Brands 2007).<sup>51</sup> The United States tabled its first draft of the NPT at the ENDC in August 1965, with the USSR following suit a month later. From 1965–1968, the superpowers would preside over the body's formal negotiations on the NPT. During this time, the Americans and Soviets regularly discussed issues and presented them to the other ENDC parties for feedback about a provision's acceptability. They then presented opposing treaty drafts. The superpowers maintained a veto over all treaty text and often rejected input from the other negotiating parties.

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His predictions about China were correct, as Beijing carried out its codename Project 596 test at the Lop Nur site in 1964. Detonation of a nuclear test explosion prior to January 1, 1967, was set as the NPT's benchmark for distinguishing between the five permitted NWS and the remaining NNWS. [See: NPT, Art. IX].

<sup>51</sup> The MLF was a plan to have nuclear-armed submarines staffed by multinational crews within the NATO command structure. It would have ensured that U.S. allies played a more active role in nuclear planning and defense within the Atlantic Alliance [See: Kohl 1965; Bunn 1992].

From the outset, Nasser's diplomats embraced the negotiations. This occurred even as Nasser hedged toward the bomb and publicly threatened to develop nuclear weapons if Israel did so. While the regime's behavior may appear counterintuitive at first glance, the NPT framework offered the Egyptian government continuous opportunities to stigmatize Israel and its activities at Dimona (Ruble 2006, 2009). Unlike other non-aligned delegations at the ENDC—like Brazil, for instance—Egypt's representatives in Geneva rarely questioned the motivation behind, and existential value of, the nonproliferation enterprise.

For Egypt, the value of the treaty was clear: the NPT offered a way to lock in a balance of power that was preferable to a nuclear-armed Israel. As a result, my theory would predict that Cairo would be an early advocate of the NPT. And in fact, it seemed as if Egypt might reveal its type as an advocate by signing the treaty, though Israel's position would shape the Egyptian decision calculus. Jerusalem consulted with Washington but was not a member of the ENDC.

In contrast to Israel, Egypt played an important role at the ENDC from the very beginning of the talks on the NPT. When the eight non-aligned states were dissatisfied with the U.S. and Soviet draft treaties of 1965, Egyptian representative Ismail Fahmy made a statement of principles (Shaker 1980a).<sup>52</sup> Fahmy highlighted 11 key points he believed were necessary for the treaty, including permanence of the agreement, global universality, freedom from loopholes, protection of the interests of NNWS, and eventual prohibition of all nuclear weapons.<sup>53</sup> Ambassador

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<sup>52</sup> Fahmy would later go on to become Egypt's foreign minister under Sadat from 1973–1977.

<sup>53</sup> See: A/C.1/PV.1359.

Mohamed Shaker, a notable Egyptian official and historian of the NPT, writes: “The statement aroused great interest among a considerable number of delegations, especially the delegations of the other seven non-aligned members of the ENDC (Shaker 1980a, p. 45).” A resolution later adopted by the UNGA included a condensed version of Fahmy’s points, which became the basis for NPT dialogue in the ENDC.<sup>54</sup>

Fahmy’s statement also offered a preview of Egyptian bargaining strategy over the NPT: to seek concessions from the superpowers and instrumentally leverage the negotiations against Israel. In fact, transcripts of conversations between U.S. Arms Control and Disarmament Agency (ACDA) Director William Foster and Soviet Ambassador Anatoly Dobrynin reveal frustration with the oftentimes unrelenting Egyptian demands (Harries 2014). Over and over again, Cairo would raise issues during the talks in Geneva that could enhance its security and later be weaponized against Israel. These topics dealt with each of the three pillars of the NPT—nonproliferation, disarmament, and peaceful uses of nuclear energy. States may argue over treaty wording and definitions relentlessly in negotiations, with agreement sometimes taking years. In the case of the NPT, the concessions from the NWS demanded by Egypt and other NNWS caused precisely this type of situation to occur.

The ENDC records highlight two central Egyptians concerns regarding the nonproliferation pillar of the treaty. First, officials in Cairo worried about the diversion of nuclear materials from NWS to NNWS. This topic likely had

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<sup>54</sup> See: A/RES/2028(XX).

its roots in the French collaboration with Israel at Dimona and led Egyptian representative Ambassador Hussein Khallaf to call for IAEA safeguards to “be extended to the transfer of nuclear material and to all nuclear activities, past and present.”<sup>55</sup> The Egyptian objection was unsuccessful and not incorporated into NPT Article III due to U.S. and Soviet unwillingness to subject their military nuclear activities to safeguards. Second, Khallaf argued that NPT Articles I and II had loopholes because they did not require states to ensure that their citizens were not engaging in illicit transfers of nuclear materials and technologies.<sup>56</sup> His fear, often repeated by Egyptian officials, was “companies, firms, and other bodies” that might engage in proliferation activities.<sup>57</sup> The concern was likely driven by the alleged collaboration of U.S. and Israeli nuclear scientists at Argonne National Laboratory. After the U.S. and Soviet delegates took great strides to clarify that the treaty did apply to these entities, Khallaf dropped this objection (Shaker 1980a).<sup>58</sup>

It is also important to recognize that the prospect of joining the treaty as a NNWS carried ex-ante costs for Egypt. “Nasser actively sought hegemony over the Arab world (Solingen 2007, p. 239),” and forgoing capabilities Israel was known to be developing came with status and security risks. Additionally, the Suez Crisis and the attempted coercion by the nuclear powers still loomed in the Egyptian national memory. With nuclear weapons of their own a seemingly distant

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<sup>55</sup> See: ENDC/PV.294, para. 14b.

<sup>56</sup> See: ENDC/PV.367, para. 10.

<sup>57</sup> See: ENDC/PV.340, para. 12.

<sup>58</sup> See also: ENDC/PV.370.



possibility, the Egyptians intended to reify a maximally favorable balance of power by taking an active role in the wording of the agreement. If Egypt was going to legally forswear nuclear weapons, Nasser required concessions from the nuclear powers on disarmament.

Harries (2014) extensively documents the making of NPT Article VI and its pledge of “a treaty on general and complete disarmament under strict and effective international control.” In doing so, he outlines the pivotal role of Egyptian actions. The superpowers tried for years to sidestep non-aligned states’ calls for disarmament language in the treaty, eventually inserting preambular language. Yet, Khallaf pushed for its inclusion as a separate treaty article, strongly backing forward-looking language on disarmament proposed by his Mexican counterpart in the ENDC. These efforts were successful and such language became a part of treaty drafts by Washington and Moscow. However, many non-aligned states were displeased with the Mexican text, as it formed the basis for the ambiguous part of Article VI: “undertakes to pursue negotiations in good faith” on disarmament.<sup>59</sup> The Egyptian Foreign Ministry secretly cabled London to share such sentiments. Cairo suggested “the best course would be to propose stronger language for inclusion in the eventual [UNGA] resolution endorsing the treaty and making recommendations to the ENDC for its next phase of work (Harries 2014, p. 126).”

Because the treaty, per Article VI, would not require immediate nuclear disarmament, Cairo began a decades-long—and still ongoing—quest for multilateral security assurances at the ENDC. Egypt supported two different UNGA

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<sup>59</sup> See: NPT, Art. VI.

resolutions calling for negative security assurances to protect the NNWS from the threat or use of nuclear weapons by the NWS.<sup>60</sup> Khallaf tabled an amendment at the ENDC in March 1967 formally calling for these assurances, warning that their exclusion from the NPT would “increase the striking power” of the NWS by giving them “the monopoly of nuclear attack.”<sup>61</sup> Egypt also backed the language of the so-called “Kosygin formula” proposed by Soviet Prime Minister Alexei Kosygin in 1966 (Shaker 1980b). In a message to the ENDC delegates, Kosygin suggested “a prohibition on the use of nuclear weapons against non-nuclear States parties to the treaty which have no nuclear weapons in their territory.”<sup>62</sup>

But as former negotiators Bunn and Timerbaev (1993, p. 12) explain, such language was intended to allow Moscow to exert coercive leverage over West Germany “unless U.S. nuclear weapons were removed from its territory.” In a 1968 memorandum to Secretary of Defense Robert McNamara, the Joint Chiefs of Staff (JCS) cautioned that negative security assurances would hurt military flexibility and the credibility of U.S. deterrence. Treaty language on this would have caused the JCS to “strongly oppose the United States becoming a party to an NPT.”<sup>63</sup>

Instead, Washington advocated for positive security assurances as proposed by Johnson to the ENDC in his pledge that “nations that do not seek the

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<sup>60</sup> See: A/RES/2028(XX); A/RES/2153(XXI).

<sup>61</sup> See: ENDC/PV.294, para. 29.

<sup>62</sup> See: ENDC/167.

<sup>63</sup> See: “Joint Chiefs of Staff Memorandum for the Secretary of Defense, ‘Security Assurances and the Nonproliferation Treaty (NPT),’” April 17, 1968, in National Security Archive (NSA) Electronic Briefing Book (EBB) 253, “‘The Impulse towards a Safer World’ 40th Anniversary of the Nuclear Nonproliferation Treaty,” Doc. 22, para. 6.

nuclear path can be sure that they will have our strong support against threats of nuclear blackmail.”<sup>64</sup> While Egypt also supported this language, contentiousness over security assurances resulted in neither their positive nor negative variants being a part of the final treaty.

Cairo had failed to obtain a pledge of protection from the superpowers against Israel. The UNSC did provide some modest reassurance to Egypt in a resolution on positive security assurances passed in the lead-up to the treaty’s opening for signature.<sup>65</sup> But Resolution 255 lacked the legal standing of a treaty and “did not define the nature of action to be taken against the aggressor state (Adeniji 1995, p. 103).”<sup>66</sup>

Egypt also sought for the treaty to be a permanent solution to the proliferation threat. This vision matched Fahmy’s recommendations in UNGA Resolution 2028. The language of Article X proposed in the U.S. and Soviet draft allowed for a state to withdraw if it believed the treaty “jeopardized the supreme interests of its country.” Further, Article X limited the agreement to an initial term of 25 years.<sup>67</sup> These clauses were unacceptable to Nasser, given the costs of joining the treaty. From 1966 until nearly the end of the ENDC negotiations in 1968, Egypt opposed the “supreme interest” provision as a threat to the treaty’s credibility (Shaker 1980b). Khallaf also vociferously argued for an NPT of indefinite duration.

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<sup>64</sup> See: ENDC/165.

<sup>65</sup> See: SC/RES/255.

<sup>66</sup> See also: Fischer 1995.

<sup>67</sup> See: NPT, Art. X.

In one meeting of the ENDC, he stated that Cairo would only support the treaty if it “constitute[d] an effective and permanent brake on the dissemination of nuclear weapons.”<sup>68</sup> Egypt would only embrace Article X, he later declared, if it “cannot in any way make possible the termination of the treaty twenty five years after its entry-into-force.”<sup>69</sup> As with many arguments made by the non-aligned states, Egypt’s demands for a treaty of indefinite duration without a withdrawal clause were rejected by the superpowers. Such provisions would likely have made many states reluctant to join the treaty, as withdrawal clauses help to mitigate state concerns about the uncertainty of the future (Korenemos 2005).

Egypt was most successful when advocating for concessions in the area of peaceful uses of nuclear technologies. These were non-trivial gains by the Nasser regime, which desired the benefits of civilian nuclear energy and the potential to hedge toward the bomb. In August 1966, the ENDC’s non-aligned members issued a joint memorandum calling for increased assistance to developing countries “to help accelerate their programmes of development of atomic energy for peaceful purposes.”<sup>70</sup> This memo led to subsequent discussions and the language of Article IV ensuring “the inalienable right of all the Parties to the Treaty to develop research, production and use of nuclear energy for peaceful purposes without discrimination.”<sup>71</sup> Egypt also backed a failed Italian proposal to

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<sup>68</sup> See: ENDC/PV.294, para. 15.

<sup>69</sup> See: ENDC/PV.367, para. 42.

<sup>70</sup> See: ENDC/178, para. 16.

<sup>71</sup> See: NPT, Art. IV.

guarantee the NNWS access to special fissionable materials (Swango 2014), which might be used in the field of nuclear medicine, for fueling research reactors, or for conducting PNEs. In the end, the efforts of the Egyptian delegation and others were successful in obtaining the Article IV language requiring “due consideration for the needs of the developing areas of the world.”

Taken together, Egypt achieved some victories—but mostly defeats—at the ENDC negotiations. When the NPT opened for signature on July 1, 1968, Nasser’s diplomats had gained pledges of support for the flagging and deprioritized AEA. They had made little progress in obtaining protection against Israel, which they assumed already had the bomb or would assemble one in due course. Timing is also a critical factor in understanding Egyptian views on the NPT. At the beginning of the negotiations in 1965, Cairo’s team in Geneva had some level of optimism about the dual strategy of nuclear hedging and preventive strikes against Dimona.

By July 1968, Egypt’s situation had radically changed, making type signaling the state’s non-nuclear intentions easier:

- The level of technical proficiency at Inshas was an international embarrassment for officials (Fahmy 2020);
- Cairo had failed to obtain turnkey nuclear weapons or sensitive nuclear assistance from China and the USSR (Walsh 2001; Einhorn 2004; Solingen 2007);
- The defeat in the Six-Day War required the rebuilding of the economy and military (Solinigen 2007; Gibbons 2016);

- The preventive strike option against Dimona was no longer viable (Elbahtimy 2018), especially given the nearly complete destruction of the air force (Joshi 2000).

Unlike some members of NATO and the Warsaw Pact, little pressure was needed to secure non-aligned Egypt's signature to the NPT (Coe and Vaynman 2015). It is accurate that Nasser's Soviet patrons encouraged him to sign the treaty as early as 1965 (Ruble 2006). Still, no historical evidence has surfaced of anything resembling coercion such as threats of abandonment. And even if Brezhnev had attempted to exert this type of leverage over Nasser, Egypt was a "loose ally (Debs and Monteiro 2017)." Moscow's failure to intervene militarily on Egypt's behalf in the Six-Day War showed Nasser the limits of its vague promises. Egypt would signal its type as a treaty advocate, not a subordinate with limited autonomy, by signing the NPT.

There had been doubts about Nasser's nuclear ambitions, as he had threatened for years to proliferate to match an Israeli bomb. But in the end, as my theory would predict, Nasser signed the NPT on July 1, 1968, the day it opened for signature. Without the technical, military, or economic capabilities to compete with a nuclear Israel, Egypt was an advocate of the distribution of power codified by the treaty. The NPT offered a reinvention of Cairo's strategy to counter Israel, as there was a belief the treaty would enhance state security by pressuring Israel to abandon its nuclear aspirations (Einhorn 2004). In the interim, the accord allowed Egypt "to give Israel a political black eye, as the 'rogue' Middle East state with nuclear weapons (Spaniel 2019, p. 86)," increasing Nasser's "leadership in

the Arab World (Ruble 2006, p. 560).” In this sense, far from decreasing Egypt’s status as one might expect, the treaty could serve as a vehicle to expand Egyptian influence in the Middle East. By type signaling as an advocate, Egypt gained leverage over Israel in international fora and telegraphed its NNWS intentions to the world. This signaling helped to begin improving ties with the great powers that could protect Egypt against the Israeli threat. Nasser, long viewed as a potential seeker of nuclear weapons, became an early champion of the treaty.

Yet, the decision of the Egyptian leader was hardly without cost. Nasser faced domestic critics in Cairo before making his decision, including Muhammad Izzat Abd-al-Aziz, who would later lead the AEA. Izzat testified before the parliament that signature would be a mistake, as only nuclear weapons could effectively counter Jerusalem (Bleek 2010a). Embracing the NPT also meant that Nasser—a harsh critic of international nuclear safeguards—had to endorse the IAEA system of controls. He did so in 1966 while demanding that Israel open Dimona to inspectors from the agency (Einhorn 2004; Ruble 2006). In truth, this rhetoric was further proof of the NPT’s instrumentalist value to Nasser, as he then declined to sign a safeguards agreement with the IAEA. To do so would have entailed a sovereignty cost by subjecting the AEA to international oversight and the intermittent presence of observers at Inshas.

The Americans had not expected Nasser to sign. Consistent with Sagan’s (2011) argument that regional rivals wait for one another to join treaties, the State Department predicted that Egypt would only sign if Israel did so.<sup>72</sup> Yet,

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<sup>72</sup> “Research Memorandum REU-25 from Thomas L. Hughes to the Secretary, ‘Attitudes of Selected Countries on Accession to a Soviet Co-sponsored Draft Agreement on the Non-

U.S. pressure on Israel to sign was unsuccessful both before and shortly after the NPT opened for signature.<sup>73</sup> What the Americans failed to realize was that endorsing the balance of power enshrined by the NPT through signature was Egypt's best available strategy to gain leverage against their regional rival. Ratification, however, was a different story.

### The Separate Peace and NPT Ratification

By quickly signing the NPT and promoting the treaty, Nasser's type signaling was a significant step forward in multilateral nuclear arms control. Still, as my theory and international law literature indicate (Aust 2013), treaty signature falls short of the deeper, firmer commitment signaling of ratification. And it would be nearly 13 years until Egypt offered such a commitment signal to the international community in 1981. Motivations were, as it turned out, different for the two signals. Ratification would only occur after what my theory refers to as a protracted debate, one focusing on key areas of security and the Egyptian national interest.

Nasser's rationale for holding out on ratifying the NPT revolved primarily around security concerns associated with the Israeli position. Even when Egypt used its non-ratification as a bargaining chip, it did so to try to obtain U.S. military aid and security commitments for protection from Israel (Spaniel 2019). Ismail Fahmy had recommended "to refrain from ratifying it until Israel did so, in

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Proliferation of Nuclear Weapons," July 15, 1965, History and Public Policy Program Digital Archive, Doc. 134060, RG 59, Entry UD-UP 140, Bureau of Intelligence and Research, Reports Coordination and Review Staff, Intelligence Reports, 1964–1965, box 1, Chron/July 1965 Research Memos, p. 6.

<sup>73</sup> See, e.g.: "Memorandum of Conversation," in *FRUS*, 1964–1968, Vol. XVIII, *Arab–Israeli Dispute*, 1964–1967, Doc. 306.



order to ensure parity in nuclear non-proliferation obligations and capacity (Fahmy 2020, p. 117).” The president, known for his enmity toward Israel, took Fahmy’s advice. After all, Egypt lacked reliable protection against the serious security threat presented by Israel. Its Soviet patron and other member states of the Warsaw Pact frequently condemned Israeli aggression at the ENDC in the 1960s,<sup>74</sup> but no delegations referred to Dimona in official proceedings or publicly called for Jerusalem to join the treaty. When Nasser died in September 1970, Egypt remained a non-party to the NPT. He had maintained this position despite ratification pressure from the superpowers in the lead-up to the treaty’s entry-into-force in March of that year.

In his last years, the president focused on rebuilding the economy and military in the aftermath of the Six-Day War. Rezek (2017, p. 200) notes concerns Nasser’s confidants had about the effect of the 1967 war on his health: “his hair ‘turned white’ and he lost the ‘spark’ in his eyes, subsumed as he was with the bitterness of defeat.” Still, he remained dedicated to combating Israel, saying, “There is no other way for us but force, we have no alternative to safeguard our honour (Rezek 2017, p. 200).”

But in the nuclear domain, Nasser had chosen the advocate’s type signal on the NPT instead of proliferation to combat the Israeli bomb. Although Egypt’s limited nuclear capabilities were apparent to foreign intelligence services long before Nasser signed the NPT, some ambiguity remained. Signature was an

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<sup>74</sup> See: ENDC/PV.137; ENDC/PV.311; ENDC/PV.326; ENDC/PV.327; ENDC/PV.381; ENDC/PV.383.

indicator of Egypt's non-nuclear intentions, but it did not carry the same weight as ratification. And Nasser's contempt for Israel contributed to this lack of clarity.

Nasser formally launched the War of Attrition in 1969, involving hostilities along the Suez Canal and commando raids and airstrikes on Israeli positions. For its part, Moscow signed a defense pact with Cairo in 1969 (Gibbons 2016) and sent "10,000 men to protect Egypt against Israeli deep penetration raids (Rezek 2017, p. 200)." A ceasefire took place on August 7, 1970, just weeks before Nasser's death, but the Israeli security threat remained high, and Moscow's protection had limits. Shortly before taking power, the new president, Anwar Sadat, declared: "Don't ask me to make diplomatic relations with [Israel]. Never. Never. Leave it to the coming generation to decide that, not me (Ruble 2009, p. 116)."

The Nasserist hatred of Israel now seemed a nearly inextricable element of the successor government.

Sadat initially followed Nasser's lead on the NPT. He never seriously considered pursuing ratification of the accord in the early 1970s. Regardless, Egyptian nuclear ambiguity did not stop Sadat and his advisors from instrumentally stigmatizing Israel with the NPT. Sadat frequently urged the American administrations of Richard M. Nixon, Gerald Ford, and Jimmy Carter to pressure Israel into the treaty. And in 1977, he would publicly call for Israel's accession to the treaty in a televised interview with ABC News (Feldman 1997). During the 1970s, Egypt and Iran also unveiled a proposal at the UNGA for a MENWFZ.<sup>75</sup>

The proposal was undoubtedly aimed at Israel, and its promotion remains a core

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<sup>75</sup> See: A/9693/Add.1; A/9693/Add.2.

part of contemporary Egyptian nuclear diplomacy (Karem 1988; Khan 2002; Kubiak 2011; Fahmy 2020). All of these efforts, however, met with little success vis-à-vis encouraging Israeli nuclear transparency, much less disarmament.

The nuclear program Sadat inherited from Nasser also remained frozen with limited funding for the AEA. Yet, studies of nuclear development list Egypt as having some level of interest in the bomb during the Sadat years (Singh and Way 2004; Jo and Gartzke 2007). In reality, the AEA made no further progress toward nuclearization under Sadat even though it continued civilian nuclear collaboration with the Soviets and began cooperation with the Indians (Bhatia 1988; Gregory 1995). Many Egyptian nuclear scientists left for Iraq and Libya due to the lack of opportunities to work on military projects (Walsh 2001).

Privately, Sadat decided that nuclear weapons lacked utility for his main foreign policy goal: re-taking territory lost in 1967. But publicly, he continued Nasser's policy of warning that Egypt would follow suit if Israel built a nuclear weapon (Einhorn 2004). His statements indicated that being an advocate of the distribution of power codified by the NPT was not the same as ratifying the treaty. Sadat also vacillated in his public positions on the Israeli program, sometimes saying he knew Jerusalem had the bomb, only to walk back such claims shortly thereafter.<sup>76</sup> Analysts have interpreted his rhetoric as a tool intended to dissuade Israeli pursuit of nuclear weapons on some occasions and to encourage pressure on his rival to join the NPT on others (Shikaki 1985).

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<sup>76</sup> However, Sadat ordered his military advisors to abandon plans for preventive action against Dimona. He apparently believed, accurately, that Israel already possessed an assembled nuclear weapon, so strikes on facilities would have little counterproliferation efficacy (Bar-Joseph 1982).

The result of Sadat's shifting rhetoric and opposition to ratifying the NPT was confusion for other states. This stance was further intensified by his declining to participate in the IAEA safeguards system. Because there was no way to verify that Egypt was in-compliance with the treaty, many observers assumed Cairo was either hedging or actively pursuing nuclearization (Spaniel 2019). But if Egypt had been effectively pursuing the bomb, the Mossad would likely have determined this, leading to an Israeli airstrike on Inshas. Regardless, there is no clear evidence that Israeli counterforce capabilities deterred Egyptian proliferation. As I discussed above, Egypt had already given up the quest for the bomb when it signed the NPT as a treaty advocate. The commitment signaling of ratification would have been a more transparent indication of Egyptian non-nuclear behavior due to its legal weight and accompanying safeguards verification inspections. Commitment signaling was, however, not yet possible due to the continuing perceptions in Cairo of an existential Israeli security threat.

The internal shift away from nuclearization represented part of a broader plan by Sadat to redefine management of the Israeli threat. Unable to develop nuclear weapons or to stop Israel from getting the bomb, the Egyptian security elite debated their options in the early 1970s. Fahmy, Heikal, and Defense Minister General Mohammed Ahmed Sadek argued for further reliance on the Soviets, possibly including forward deployments of nuclear weapons in Egypt. But the Soviets were unequivocal in their rejection of the proposal, and Sadat no longer wished for Cairo to be beholden to Moscow (Bar-Joseph 1982). In fact, Sadat disliked the Soviets and believed Nasser's alliance with them had done little to

attenuate the serious security threat from Israel. He even told his advisors that “they make my blood boil (Bahgat 2007, p. 415).” In 1972, he expelled Soviet troops and military advisors from the country.

Instead, Sadat ordered his national security advisor Muhammad Hafiz Ismail to request secret talks with the Americans (Gibbons 2016). Ismail communicated to his counterpart in the Nixon administration, Henry Kissinger, that Sadat wanted a long-term peace settlement with the Israelis.<sup>77</sup> On Kissinger’s invitation, Ismail traveled to the United States in February 1973, where he met with Nixon and Kissinger. Nixon assured Ismail in a lengthy meeting of the U.S. commitment to brokering a permanent peace between the rivals.<sup>78</sup> Sadat became frustrated when the backchannel did not quickly produce results, as Israel was disinterested in returning territory to Egypt in exchange for peace. By May 1973, U.S. State Department intelligence assessed that “mounting evidence indicates that he is becoming ever more strongly tempted to resort to arms.”<sup>79</sup> Meanwhile, a U.S. National Intelligence Estimate concluded that Sadat sought to spark U.S. and Soviet intervention and subsequent support for a peace deal with Israel.<sup>80</sup>

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<sup>77</sup> “Paper Prepared in the Central Intelligence Agency,” Washington, DC, n.d., in *FRUS*, 1969–1976, Vol. XXV, *Arab–Israeli Crisis and War, 1973*, Doc. 10.

<sup>78</sup> “Memorandum for the President’s Files by the President’s Deputy Assistant for National Security Affairs (Scowcroft),” Washington, DC, February 23, 1973, in *FRUS*, 1969–1976, Vol. XXV, *Arab–Israeli Crisis and War, 1973*, Doc. 26.

<sup>79</sup> Qtd. in “Editorial Note,” in *FRUS*, 1969–1976, Vol. XXV, *Arab–Israeli Crisis and War, 1973*, Doc. 65.

<sup>80</sup> “Possible Egyptian–Israel Hostilities: Determinants and Implications’ National Intelligence Assessment 30-73,” May 17, 1973, CIA FOIA Electronic Reading Room, Special Collection, President Nixon and the Role of Intelligence in the 1973 Arab–Israeli War, Doc. 51112a4a993247d4d8394479.

As it turned out, the State Department had correctly predicted the onset of the Yom Kippur War in 1973 but failed to avert it. On October 6, Sadat launched a surprise attack across the Suez Canal and occupied the Sinai Peninsula, and Syrian forces attempted to retake the Golan Heights (Rabinovich 2007; Fahmy 2020). Israeli airpower “was neutralised in the early part of the 1973 war” and “frontlines on the Golan Heights and the Sinai were similarly smashed by Syrian and Egyptian armour (Joshi 2000, p. 2104).” Israel rallied and won a military victory over the Egyptians, the Syrians, and coalition forces from other Arab states. But the conflict shattered the perception of Israeli invulnerability, and leaders in Jerusalem recognized the limited utility of nuclear weapons. Indeed, the Arab forces intentionally forwent crossing the border into Israel out of a fear of nuclear escalation. Meanwhile, decision-makers in Jerusalem would not authorize the use of nuclear weapons due to the conflict’s limited nature (Joshi 2000; Bleek 2010a).

The war had two important strategic implications. First, Sadat had achieved his goal of getting total commitment from Washington in achieving a lasting peace. Second, Egyptian policy-makers realized that they might have the capacity to one day defeat Israel in a conventional conflict (Spaniel 2019). This strategic reassessment served as a counterpoint to advocates of nuclearization, who said Egypt must acquire the bomb to be victorious against Israel. Consequently, the war essentially silenced the last elements in the government supporting proliferation (Walsh 2001; Rublee 2006; Gibbons 2016).

The war also led to an oil crisis, which lasted from October 1973 until March 1974. The Organization of Arab Petroleum Exporting Countries (OAPEC)

had announced an oil embargo on the United States and other countries viewed as supporting Israel in the war. They also cut their oil production. Together, these efforts led to global shortages and triggered a four-fold worldwide increase in crude oil prices (Merrill 2007; Corbett 2013). The war and the OAPEC boycott made clear to Washington that there were costs to the continuing conflict between Egypt and Israel. Egypt was also unable to regain its oil fields in the Sinai and witnessed the vulnerabilities of oil dependence.

Mutual Egypt–U.S. interest in improved relations in the aftermath of the Yom Kippur War led to the possibility of a nuclear energy deal. At first, Washington had to compete with France, India, the Soviet Union, and West Germany for an agreement to sell power reactors to Egypt (Walsh 2001). Egypt opted for the U.S. offer made personally to Sadat by Nixon during a 1974 visit to Cairo. Alongside the twin Westinghouse 600-megawatt reactors offered to Sadat, Nixon was also willing to provide nuclear power to Israel.

However, the United States would seek the implementation of safeguards on each state's nuclear program. Sadat accepted the offer in principle, as it would provide advanced energy technologies to Egypt, and Israeli participation would finally mean transparency at Dimona (Barnaby 1989).<sup>81</sup> American engineers quickly began working on site surveys in Egypt to construct the reactors (Nashif 1984). But the Israelis viewed the offer as a Trojan Horse to

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<sup>81</sup> It should be noted that Sadat had a long history of advocating for transparency at Dimona, documented in meeting reports from the State Department as early as 1966 (when he was president of the Egyptian parliament). [See: "Telegram From the Department of State to the Embassy in the United Arab Republic," Washington, DC, February 28, 1966, in *FRUS*, 1964–1968, Vol. XVIII, *Arab–Israeli Dispute, 1964–1967*, Doc. 27].

force their entry into the NPT and only accepted the deal after it was re-written to exclude inspections at Dimona (Rabinowitz 2018). In Egypt, the purchase of the reactors also stalled, as Sadat rejected increasingly stringent U.S. safeguards demands in the face of a perceived Israeli nuclear threat (Selim 1996). To accept the American conditions would have meant full transparency at Inshas while Israel pushed ahead with military nuclear activities at Dimona. Intensified U.S. pressure from the Carter administration under the auspices of the Nuclear Nonproliferation Act (NNPA) of 1978 would further complicate Egypt's situation (Gibbons 2016). It soon became apparent that only by joining the NPT could Egypt (and Israel) truly gain access to foreign nuclear energy technologies.

Accordingly, many scholars (Kats 1985; Barnaby 1989; Solingen 2007) contend that Egyptian interest in nuclear energy and U.S. safeguards pressure led to Sadat's change of heart on the NPT. The historical record shows that Sadat certainly wanted Egypt to have a vibrant nuclear energy program, but this in itself was not a sufficient incentive for ratifying the NPT. If it had been, Egypt would have accepted safeguards in the mid-1970s and quickly deposited its instrument of ratification in the late 1970s. Cairo had already abandoned its military nuclear pursuits for all practical purposes. But yet, Egypt waited for the outcome of U.S. negotiations with Israel and would not accept full transparency at its extant nuclear sites without a reciprocal pledge from Israel.<sup>82</sup> Sadat could not accept safeguards or ratify the NPT at this time while Egypt continued to face a serious security threat from Israel. Cairo's decision to delay ratification due to security

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<sup>82</sup> See: "Memorandum From Secretary of State Vance to President Carter," in *FRUS*, 1977–1980, Vol. XXVI, *Arms Control and Nonproliferation*, Doc. 364.



concerns is in line with my theory's predictions about the commitment signal that ratification sends. When state survival is at risk, states may say "No" to nuclear weapons, but will balk at saying "Never," even at the cost of civilian nuclear energy.

Diplomacy with Israel—mediated by the Nixon and Ford administrations—produced some early success for Sadat from 1974–1975. The resultant First and Second Disengagement Agreements "returned a narrow sliver of the Sinai back to Egypt (Berenji 2020, p. 134)." But Sadat desired broader territorial concessions, and the Israeli security threat remained. One of Sadat's steps in rapprochement with Washington was formally abrogating Nasser's defense pact with Moscow in 1976 (Gibbons 2016). This produced the inadvertent consequence of swinging the regional balance of power heavily in Israel's favor when weapons exports from the USSR declined (Berenji 2020). Sadat also was not content to rely only on the Americans, establishing a backchannel relationship with Israel that paved the way for his historic visit to Jerusalem in 1977. There, Sadat spoke to the Knesset and expressed his strong desire to conclude a peace agreement (Berenji 2020). Additionally, there was a nuclear dimension to the visit, as Sadat raised the issue of Israeli accession to the NPT with Israeli Prime Minister Menachem Begin (Shikaki 1985). Both Sadat and Fahmy had previously stated that this would be a precondition to a peace agreement (Einhorn 2004).

After Sadat visited Jerusalem, the Carter administration hosted the 1978 meetings that led to the Camp David Accords (Kamel 1986; Quandt 2015). The resolution of territorial disputes was the central objective, but the parties also discussed nuclear issues and the NPT. In the early stages of negotiations,

Egyptian Undersecretary of Foreign Affairs Osama El-Baz said, “The (nuclear) issue creates a special element of tension in the area. It gives psychological and physical concern to both sides.”<sup>83</sup> El-Baz proposed that both sides join the NPT, in line with the original U.S. negotiating position. Cairo would also suggest that both sides accept comprehensive safeguards on their nuclear programs—since Sadat sought transparency at Dimona—and that Israel agree to a no-first-use of nuclear weapons pledge regarding Egypt (Walsh 2001). Israel rejected each of these propositions, confirming the long suspected nuclear threat to Egypt. For the Egyptian negotiators, Jerusalem’s nuclear status increased the imperative to achieve a peace deal (Nashif 1984).

Sadat was unhappy with the Israeli stance on nuclear weapons and the NPT at Camp David, but he told Carter in a letter that this did not preclude further negotiations:

The Israelis did not commit themselves to adhere to the treaty on the non-proliferation of nuclear weapons. [...] Nevertheless, I decided to proceed in the hope that these shortcomings will be remedied in the future with the progressive development of peace, as I have believed and still believe that the real peace process starts only after the signing.<sup>84</sup>

Sadat and Begin would go on to sign the 1978 Camp David Accords and the 1979 Egypt–Israel Peace Treaty. The countries agreed to normalize their relations and

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<sup>83</sup> See: “Memorandum of Conversation,” Camp David, September 12, 1978, in *FRUS*, 1977–1980, Vol. IX, *Arab–Israeli Dispute, August 1978–December 1980*, 2nd rev. ed., Doc. 46.

<sup>84</sup> Qtd. in “Telegram From the Embassy in Egypt to the Department of State,” Cairo, November 29, 1978, in *FRUS*, 1977–1980, Vol. IX, *Arab–Israeli Dispute, August 1978–December 1980*, 2nd rev. ed., Doc. 145.

that Israel would return the Sinai Peninsula to Egypt conditional on its demilitarization.<sup>85</sup> The treaty took effect in January 1980, and soon after that, the parties opened their borders and established diplomatic representation. Not only had the Israeli security threat attenuated, but normalization of Egypt–Israel relations provided the opportunity for Cairo to negotiate a robust military alliance with the United States. With an alliance in place, it would no longer be in U.S. interests to allow conflict between Egypt and Israel. The Egyptians knew after the Camp David process, however, that forging a partnership with Washington would require its embrace of NNWS status. Sadat and the AEA had already abandoned Egypt’s nuclearization goals, so the NPT offered a bargaining chip to enhance ties with the Americans (Ruble 2009).

Sadat now had multiple reasons to revisit the Nasserist policy of declining to ratify the NPT. These reasons included the pursuit of nuclear energy, the possibility of an alliance with Washington, and mitigation of the serious security threat from Israel. Jerusalem had rejected the NPT at Camp David, but the Egyptian security situation had improved markedly. Sadat had regained the Sinai and now faced a pathway to obtaining a new patron. Further, in 1980, Israel did not oppose Cairo’s calls for a MENWFZ at the UNGA for the first time (Kats 1985). Some Egyptian officials also believed that Israel might eventually accept the NPT as part of the broader peace process.<sup>86</sup> Commitment signaling to formalize Egypt’s

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<sup>85</sup> See: Treaty of Peace Between the Arab Republic of Egypt and the State of Israel (March 26, 1979) 1136 *UNTS* 17813.

<sup>86</sup> See: “Oral History Interview with Nabil Fahmy,” April 12, 2017, History and Public Policy Program Digital Archive, Doc. 177817, contributed by Hassan Elbahtimy.

legal nuclear forbearance now appeared possible, but a protracted ratification debate would have to occur first.

In 1980, Sadat created a commission under former Foreign Minister Boutros Boutros-Ghali to study the potential ramifications of ratifying the NPT. According to Walsh (2001, p. 211) and his sources in the Foreign Ministry, “In its deliberations, the commission explicitly examined whether Egypt *could* develop nuclear weapons (‘how far can we go’) as well as whether the country *should* develop nuclear weapons.” On balance, the commission concluded that ratifying the NPT and forgoing nuclearization would be in the best interests of the state. Some members supported joining the treaty to allow for increased nuclear exports and hedging, but their views did not find favor with Sadat (Walsh 2001).

Support for NPT ratification, in principle, was not without its critics. A minority of the Boutros-Ghali commission argued that Cairo should pursue the bomb for its forward-looking security and remain outside of the NPT (Walsh 2001). The future Foreign Minister (2013–2013), Nabil Fahmy, son of Ismail Fahmy, was among the skeptics in the ministry who fought against ratification. In his memoirs, Fahmy (2020, p. 118) writes that the eventual decision to ratify represented Egypt “strategically damaging its national security and losing whatever leverage it had [...] with Israel to pursue universal adherence to the treaty in the Middle East or as a zone free of nuclear weapons.” Fahmy’s analysis sheds light on the notion that legally forswearing nuclear weapons is not equivalent to “freezing” a nuclear program. Because nuclear weapons can guarantee national survival, multilateral arms control treaties like the NPT are not to be taken lightly. Sadat, however,

believed his achievements at Camp David had monumentally improved Egypt's security environment.

Indeed, Sadat declared in December 1980 that Egypt would ratify the NPT and conclude the long avoided safeguards agreement with the IAEA. As the theory predicts, once the necessary security condition for ratification had been met, the final commitment signal came shortly thereafter. The parliament finalized ratification on February 26, 1981. Since Egypt's main security issues had been addressed in the years leading up to ratification, parliamentary discussions mainly dealt with nuclear energy and future partnership with the United States. One influential parliamentarian and committee chair, Sayed Nofal, also made the case that ratification would give Egypt access to positive security assurances—per UNGA Resolution 255—if the state ever faced a nuclear attack or blackmail attempt (Kats 1985).

All things considered, mitigation of the Israeli threat was undoubtedly the element that allowed Egyptian commitment signaling in the NPT context. Access to energy technology was simply a treaty-contingent benefit. The nuclear energy program itself was soon terminated due to “fear of dependence on the West, high costs, and, in the wake of Chernobyl, concerns with potential environmental hazards (Solingen 2007, p. 230).” Though the literature identifies civilian nuclear energy access as the determinative factor behind Cairo's ratification (Kats 1985; Barnaby 1989; Solingen 2007), Egypt still has no nuclear power plants on its territory to this day. The NPT commitment remains. Former

U.S. arms control official Dean Rust (2006) highlights the importance of the causal mechanism of an improved security environment:

Whoever thought that the strongest Arab state would disavow weapons before Israel did. Nobody ever thought that. But political changes can yield policy changes. Nonproliferation is essentially an effort to hold the line, i.e. sustain a [sic] international regime that satisfies those who have already joined while offering a cost/benefit ratio to those outside that can ultimately appeal under the right political leadership. Of course, your general diplomacy aimed [sic] fostering stability in volatile regions is one of the most important indirect tools you have to foster nonproliferation. I am fond of saying that the Camp David Accords were one of the biggest nonproliferation events in the Middle East, as it led to a negotiated peace between Egypt and Israel. And it led Sadat to join the NPT in 1981, thus breaking a major taboo among Arabs who had continued to resist the NPT while Israel was outside the Treaty. The elimination of Egypt as a potential nuclear competitor to Israel may also have contributed to Israel's continued willingness to keep its bomb in the basement.<sup>87</sup>

Following Sadat's assassination in October 1981, Hosni Mubarak became the new president and continued Egyptian adherence to the NPT. Mubarak's relationship with the NPT was not without complications, as he publicly stated Egypt might consider proliferating in the future when asked about threats from Israel and Iran. Yet, when the military asked Mubarak to reconsider the nuclear option in 1984, the president rejected the proposal as inconsistent with the NPT and the national security interests of the country (Walsh 2001). The Mubarak regime also threatened to prevent the indefinite extension of the treaty at the 1995

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<sup>87</sup> See: Dean Rust, interview by Charles Stuart Kennedy, December 6, 2006, Association for Diplomatic Studies and Training, Foreign Affairs Oral History Project, <http://lcweb2.loc.gov/service/mss/mfdip/2007/2007rus02/2007rus02.pdf>.

Review Conference over Israel's lack of compliance (Graham 2002) and has not adopted an Additional Protocol with the IAEA allowing for more stringent inspections (Gibbons 2016). As I explained in Chapter 2, withdrawing from treaties after ratification is very costly. If Egypt were to leave the NPT and pursue nuclearization, it would almost certainly invite international sanctions, a loss of U.S. aid, and possibly an Israeli preventive strike.<sup>88</sup>

### Deciphering the CTBT Conundrum

The CTBT presented Egypt with a somewhat different situation than the NPT did. When the treaty negotiations began, Egypt had already signaled its commitment to legally forswear nuclear weapons by ratifying the NPT. A treaty prohibiting the testing of weapons Egypt was barred from having should not have been difficult for Cairo to join. Nevertheless, the Egyptian pattern of behavior, signing almost immediately as an advocate and then holding off on ratification, was similar to its NPT decision-making.

The CTBT also aspires for universal membership like the NPT. It bans nuclear test explosions and PNEs in all environments: underground, underwater, and in the Earth's atmosphere. There is a clear statistical relationship between its opening for signature in 1996 and the downtrending numbers of nuclear tests (Herzog, Ko, and Lee 2021). Only three states—India, North Korea,

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<sup>88</sup> Previous Israeli preventive strikes took place on the Osirak site in Iraq in 1981 (Operation Opera) and the Al-Kibar site in Syria in 2007 (Operation Outside the Box). [On the former see: Braut-Hegghammer 2011; Raas and Long 2017. On the latter see: Haas and Yarhi-Milo 2020/2021].

and Pakistan—have tested since 1996.<sup>89</sup> Only North Korea has tested in the twenty-first century.

At first, Egypt's participation in the CTBT appeared promising. President Hosni Mubarak signed the accord on October 14, 1996, just three weeks after it opened for signature. Yet, even after type signaling as an advocate, to this day Egypt has not provided a commitment signal by ratifying the treaty. Why has a state that has chosen to legally forswear nuclear weapons via the NPT been unwilling to fully accept the CTBT? Below I demonstrate that, again, an Israeli security threat—and Iranian to a lesser extent—has motivated decision-making in Cairo. Egypt's refusal to ratify has existential implications for the CTBT, as it is one of 44 “nuclear-capable states” that must ratify before the treaty enters into force.<sup>90</sup>

Egyptian government interest in nuclear explosions pre-dated the negotiation of the CTBT by more than three decades. From 1959–1975, engineers from the IAEA, the United States, the USSR, and most prominently, West Germany, were consulted about using PNEs to excavate a canal from the Mediterranean Sea to the Qattara Depression (Shaker 1980a, Nashif 1984, Walsh 2001). The plan was to use the considerable difference in elevation to produce hydroelectric power from a new artificial lake, but it never proceeded beyond the site survey stage.

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<sup>89</sup> India and Pakistan have abstained from nuclear test explosions since 1998.

<sup>90</sup> Annex 2 to the CTBT lists these states, which were the members of the CD during the negotiations possessing nuclear research or power reactors. Note that “nuclear-capable” does not necessarily indicate the technical ability to conduct a nuclear test. [See: CTBT, Annex 2].



Egypt (and Israel) had also followed the lead of Britain, the Soviet Union, and the United States by signing the LTBT in 1963 and ratifying it in 1964.<sup>91</sup> The LTBT forbids atmospheric, underwater, and outer space nuclear tests. It allows only underground test explosions due to concerns related to the environment and international provocation.<sup>92</sup> And in the late 1960s and early 1970s, Egypt proposed that a total ban on tests in the future might rely on a verification regime consisting of OSI coupled with sharing of national seismic data (Shaker 1980b, pp. 623–624).

These topics would return to the fore in nuclear diplomacy in the 1990s. After the end of the Cold War, the international community had new optimism in the areas of nuclear arms control, nonproliferation, and disarmament. At a 1991 conference to amend the LTBT, over 60 States Parties endorsed the negotiation of a CTBT (Mackby 2016). The Soviet Union (later the Russian Federation) had tested in 1990 and never would again, and President George H. W. Bush ordered a national moratorium after carrying out the last U.S. test in 1992 (Herzog and Baron 2017).<sup>93</sup> When President Bill Clinton stated the U.S. willingness to pursue the CTBT, a three-year negotiating process began at the CD in Geneva from 1993–1996. Detailed talks on the treaty’s provisions occurred from 1994–1996. A total of 61 states negotiated the agreement (Mackby 2016). Clinton referred to it as “the longest-sought, hardest-fought prize in the history of arms

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<sup>91</sup> The LTBT is also often referred to as the Partial Test-Ban Treaty (PTBT).

<sup>92</sup> See: Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and Under Water (August 5, 1963), 480 *UNTS* 43.

<sup>93</sup> Bush had little choice as he was forbidden from future nuclear testing by the U.S. Congress.

control” given the decades of international interest in such a ban (qtd. in Herzog 2017, p. 26).

The treaty negotiating record reveals a supportive Egyptian delegation from the very beginning under Ambassador Mounir Zaharan.<sup>94</sup> Cairo had three key areas of interest. They included: the allowable yield threshold for the treaty, its provisions for OSI, and its entry-into-force parameters. The commonality of these three areas is their relationship to Israel, whose nuclear program the Egyptians sought to constrain. Indeed, Jerusalem’s refusal to ratify the NPT after Cairo offered its commitment signal had produced severe discontent in the Egyptian foreign policy establishment (Fahmy 2020). They again viewed the Israeli program as both a direct threat to Egypt and a potential catalyst for nuclear proliferation dominoes among other states in the Middle East like Iran.

On the subject of the allowable yield threshold, it was not always clear that the CTBT would be a “zero-yield” treaty barring all supercritical test explosions. The five Permanent Members of the UNSC (P5) sought to preserve “safety tests, low-yield and hydronuclear tests, laboratory experiments, simulations and peaceful nuclear explosions (Johnson 2009, p. 58).” They argued for yield threshold limits in the CTBT between 1.8 kilograms (United States) and “perhaps

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<sup>94</sup> See: CD/PV.667. Two books are generally viewed as providing the most authoritative and historically accurate summaries of the CTBT negotiations. Ramaker et al (2003) chronicles the discussions from perspective of members of the CD Secretariat. Johnson (2009) provides an outlook from a nongovernmental observer who was in the room for many—but not all—of the negotiation sessions.

around 500 [tons]" (China) (Johnson 2009, p. 60).<sup>95</sup> Cairo was an early supporter of a complete prohibition on all nuclear explosions.<sup>96</sup> The Egyptians joined Iran in endorsing zero-yield language by Australia that was eventually adopted by the P5 and inserted into the treaty (Ramaker et al. 2003). Their concern lay in reports that "Israel already possessed laboratory-based hydronuclear testing capabilities and could thus benefit from a provision in the CTBT permitting hydronuclear experiments below a certain threshold (Johnson 2009, p. 83)." Cairo had also tried to ban all "tests," including subcritical experiments that do produce a nuclear explosive yield, but was rebuffed by the P5 (Ramaker et al. 2003).

The negotiating parties at the CD also developed parameters for OSI in the test ban. Known as the treaty's "final verification measure," the OSI provisions allow—after entry-into-force—a team of multinational inspectors to investigate suspicious geophysical events that might be nuclear tests. A new international organization called the CTBTO would conduct the inspections. Debate arose in the CD over "red light" or "green light" procedures for voting on OSI (Ramaker et al. 2003). Red light proponents like Egypt wanted inspections to occur unless the elected governing body of the CTBTO, its Executive Council composed of States Parties, voted against them. Green light proponents only wanted OSI to be permissible if the Executive Council voted to support them. The core difference was that negotiators believed the red light procedure would make

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<sup>95</sup> The Clinton administration's proposed 1.8-kilogram yield came after fierce internal debate among the U.S. national security establishment during 1993. Some members of the administration had initially preferred a treaty with a one-kiloton yield limit on explosive tests. [See: Johnson 2009].

<sup>96</sup> See: CD/PV.676.

the onset of inspections considerably easier, presumably in the case of Israel in the imagination of Egyptian officials. In the end, the green light advocates were victorious. China and Russia were members of the latter group and may have derailed the treaty if they believed it would severely infringe on state sovereignty.

Lastly, Egypt had a strong interest in the CTBT entry-into-force clause. Mubarak's negotiators were familiar with the lessons of the NPT and did not want another treaty that restricted Cairo but not Jerusalem. Consequently, Ambassador Zaharan and his team argued for entry-into-force only after ratification by all nuclear-armed states, including Israel.<sup>97</sup> Such language was rejected by the negotiating parties because it would theoretically permit aspiring proliferators to remain outside the treaty. Other states at the CD tabled a range of further possibilities for entry-into-force procedures.

Egypt thus supported one of the stricter paths to entry-into-force, which formed the basis of official treaty language (Ramaker et al. 2003; Johnson 2009). Rather than a simple majority or required number of states, the accord's Annex 2 lists 44 specific countries that must ratify before the CTBT may enter into force. These so-called "Annex 2 states" were the CD members who had active research reactors or nuclear power reactors on their territory during the negotiations. Both Egypt and Israel are in the group of Annex 2 states; neither state may be bound by the treaty's entry-into-force while the other enjoys the legal freedom to conduct nuclear tests. However, Egypt also took an active leadership role among the majority-Muslim Middle Eastern states, which prevented any

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<sup>97</sup> See: CD/PV.676.

language from becoming a part of the CTBT that might seem to legitimate the Israeli nuclear weapon program (Horovitz and Golan-Vilella 2010b).

Once again, Cairo supported the balance of power defined by the treaty, even as it pushed for more favorable terms. As discussed above, Mubarak quickly type signaled Egypt's status as an advocate for the CTBT. Entry-into-force would constrain horizontal proliferation by new states like Iran as well as vertical proliferation by Israel due to its implications for weapons development (Herzog, Ko, and Lee 2021). Cairo supported these effects on the balance of power. But like Nasser and the NPT, Mubarak declined to pursue ratification in the parliament. Security concerns again stopped Cairo short of sending the binding commitment signal of ratification. Egyptian officials are always quick to rhetorically support the CTBT in multilateral fora, but caution they are unable to view it "as a secluded legal instrument, isolated from other treaties (Horovitz and Golan-Vilella 2010a, p. 11)." In the era after it ratified the NPT, Cairo has also come to see "Israel's nuclear superiority as intolerable [and] gradually conditioned all of its arms control progress on Israel's NPT accession (Horovitz and Golan-Vilella 2010a, p. 11)." Neither Mubarak's successor Morsi, nor current Egyptian President Al-Sisi, have deviated from this course.

It has been 25 years since Egypt first linked its CTBT ratification to Israel acceding to the NPT. Whether Egypt will ratify absent such a commitment from Israel remains to be seen. History shows, however, that Egypt is willing to be flexible on multilateral nuclear arms control when there are alternative means of guaranteeing its national security (Horovitz and Golan-Vilella 2010a). Israel has

signed but not ratified the CTBT and conditions its ratification on a list of three challenging points, one of which may require the unlikely prospect of its diplomatic recognition by Iran (Alon-Bar 2010). There are no indications that Israeli ratification of the CTBT, absent NPT accession, would change Egyptian views on the test ban. Likewise, an Iranian drive toward the bomb would also deter Egypt from ratification. In the meantime, Egypt and Israel remain alongside China, India, Iran, North Korea, Pakistan, and the United States as the holdouts to the CTBT entering into force. Unsurprisingly, arms controllers frequently discuss the linkages between these remaining Annex 2 states.

Egypt's resistance to the CTBT poses potential hurdles to global monitoring of nuclear tests. Even before the treaty's entry-into-force, a network of geophysical monitoring stations associated with the agreement is continuously scanning the globe for nuclear explosions (Dahlman et al. 2011). This International Monitoring System (IMS), which will consist of 337 seismic, infrasound, hydroacoustic, and radionuclide stations and laboratories when complete, detected all six North Korean tests (Herzog 2017). To date, 302 of the 337 facilities are certified by the CTBTO and collecting data in real-time for global distribution.<sup>98</sup> But Annex 1 to the CTBT's protocol delineates the location coordinates for each station, many of which are politically contentious.<sup>99</sup> For its part, Egypt has so far declined to install its planned IMS seismic stations at Luxor and Kottamya. Much of the Middle East is a region of high seismicity (Gök et al. 2012), where

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<sup>98</sup> See: CTBTO, "CTBTO World Map," updated as of March 9, 2021, <https://www.ctbto.org/map/>.

<sup>99</sup> See: CTBT, Protocol, Annex 1.

discriminating between earthquakes and nuclear test explosions could prove complicated in the absence of data from stations in Egypt.<sup>100</sup> North Korea, on the other hand, is an aseismic zone, where identifying tests is technically simple. Installation of Egyptian stations is essential to preventing heated misperception, such as when Egypt and Libya mistook a small earthquake on the Red Sea floor for an Israeli test (Graham 2002).

### Conclusion

Egypt appears, on paper, to be a puzzle in the domain of multilateral nuclear arms control. It is a state that has quickly signed treaties and then waited more than a decade to ratify. It is a state with proud nationalist leaders and a history of dreaming about the bomb that nonetheless legally forswore nuclear weapons as its enduring rival built them. It is a state that has agreed never to develop nuclear weapons but refuses to give up the right to test nuclear weapons. Perhaps it is no wonder that former U.S. arms control official Robert Einhorn (2004, p. 43) has aptly described Egypt as “frustrated but still on a non-nuclear course.”<sup>101</sup>

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<sup>100</sup> A U.S. National Academy of Sciences (2012) study assessed that the CTBT was effectively verifiable. However, it did so on the basis of both the IMS and advanced U.S. national technical means (NTM), which other countries do not possess. History suggests that the IMS would almost certainly detect any low-yield nuclear test of military significance in the Middle East, but discrimination would be improved by transmission of seismic data from stations in Egypt.

<sup>101</sup> There was also an incident in 2004 when the IAEA determined that Egypt had been carrying out nuclear processing activities for medical isotope production from 1990–2003 outside of agency safeguards. Such activities “were permissible” according to the IAEA but should have been reported (Gibbons 2016, p. 259). The Egyptians attributed the incident to “misunderstanding” their safeguards obligations, and experts have assessed that these activities are not evidence of nuclearization intent (Boylan 2018, p. 115). See also: Findlay 2015.

Yet for all the seemingly inexplicable elements of Egypt's nuclear diplomacy, Cairo exemplifies the logic of my process-based theory of multilateral nuclear arms control. Nasserist Egypt was not forced into the NPT by its Soviet patron. Instead, it type signaled as an advocate of the treaty, immediately signing in 1968 because Egyptian leaders imagined a world where the NPT would delay or roll back the Israeli nuclear program. Still, Egypt lacked reliable protection against its nuclear-armed rival, Israel. And so long as a serious security threat persisted, Cairo could not issue a commitment signal. This chapter demonstrated that the reduction of the Israeli threat, not the quest for civilian nuclear energy as identified in previous studies, was the most critical factor encouraging Sadat's ratification. Today, Egypt has no nuclear power reactors on its territory, but its commitment to the NPT remains.

Only when Sadat had secured the Egypt–Israel Peace Treaty and the prospect of a military alliance with the United States could Egypt ratify the NPT in 1981. Similarly, Egypt issued the advocate's type signal on the CTBT when Mubarak quickly signed in 1996. The treaty offered another step toward a world free of nuclear advantages that Egypt had already committed not to possess. But by that time, the Israeli nuclear arsenal was once again seen as a serious threat in Cairo. Until the threat attenuates through Jerusalem's accession to the NPT or another credible means of enhancing Egyptian security, observers should not expect the commitment signal of CTBT ratification.



## **Chapter 4 – Romania: Foreign Policy Activism Meets Patron Coercion**

During the Cold War, the USSR dominated its client states. Soviet protégés that did not fall into line with Moscow's wishes risked responses like the invasions of Hungary in 1956 and Czechoslovakia in 1968. Yet, the Socialist Republic of Romania's (RSR) foreign policy often differed sharply from other European satellite states in the Soviet sphere of influence.<sup>102</sup> Under Romanian Communist Party (PCR) leader Gheorghe Gheorghiu-Dej, Bucharest pursued rapprochement with the United States and other NATO states beginning in the early 1950s. The regime also welcomed the withdrawal of Soviet troops in 1958 and declined to participate in many Warsaw Pact plans orchestrated in Moscow. Such activism also took place in the nuclear domain, as Romania attempted to purchase civilian nuclear technologies from a range of suppliers during the 1960s and 1970s. Gheorghiu-Dej's successor Nicolae Ceaușescu even ordered low-level exploratory nuclear weapons research from 1983–1985. For these types of reasons, Eliza Gheorghe (2012, 2013b) has described Romania as an “atomic maverick.”

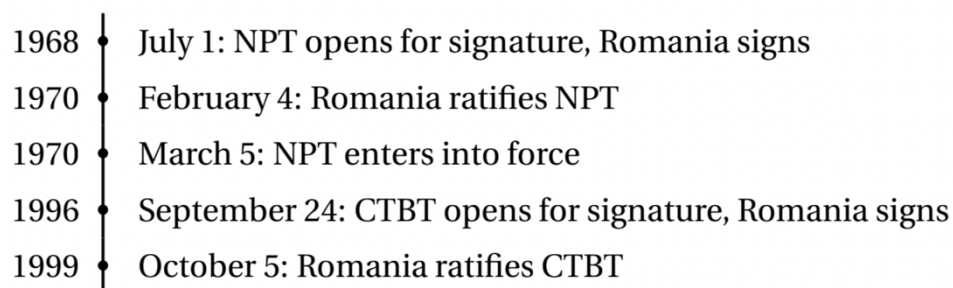
The Romanian independent streak leaves the state's multilateral nuclear arms control behavior unexplained. Consistent with other actions, PCR officials vehemently criticized the NPT in the ENDC negotiations on the treaty in Geneva. Regardless, Ceaușescu still signed the NPT on July 1, 1968, the day it

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<sup>102</sup> Romania was officially the RSR from 1965–1989 but was known as the Romanian People's Republic (RPR) from 1947–1965. I use RSR throughout this chapter to refer to the state prior to its transition to democracy at the end of the Cold War. The other European satellite states were: Albania, Bulgaria, Czechoslovakia, the German Democratic Republic (GDR, East Germany), Hungary, Poland, and Yugoslavia. Albania (1961; formal Warsaw Pact withdrawal in 1968) and Yugoslavia (1948) would split from alignment with the USSR. Regardless, Moscow still maintained some level of coercive influence in Tirana and Belgrade.

opened for signature. Ceaușescu then asked his rubber-stamp parliament to ratify the accord in early 1970. The result is that a simple analysis of NPT signature and ratification dates, as shown in Figure 5, depicts Romania as nearly observationally equivalent to the other states of the Warsaw Pact. However, Bucharest's outspoken opposition to the NPT stood in strong contrast to its allies' support of the agreement. Reading Romanian public positions and literature on the state's Cold War autonomy makes it challenging to understand why Bucharest reversed course and legally forswore nuclear arms.

**Figure 5:** Timeline of Romanian NPT and CTBT Diplomacy



1968	•	July 1: NPT opens for signature, Romania signs
1970	•	February 4: Romania ratifies NPT
1970	•	March 5: NPT enters into force
1996	•	September 24: CTBT opens for signature, Romania signs
1999	•	October 5: Romania ratifies CTBT

The extant literature mainly attributes the sudden Romanian about-face on the NPT to a desire to obtain a civilian nuclear energy program (Gheorghe 2013a, 2014) or to claim partial credit for negotiating a successful treaty (Crump-Gabreëls 2017). Both explanations pertain to benefits derived from NPT participation while recognizing the occurrence of Soviet pressure. Still, neither fully captures the extent to which Soviet diplomatic coercion constrained the RSR's aspirations for autonomy. Why then did Romanian foreign and nuclear policy iconoclasm fade away into a quick acceptance of the treaty?

This chapter shows that Romanian desires for autonomy in the arms control domain were not possible due to its subordinate position in the patron–

client relationship with the Soviet Union. The chapter draws on historical accounts, ENDC and Warsaw Pact meeting records, and declassified diplomatic communications. For all its leaders' rhetoric, Romania was a subordinate, as noted in Table 3 of Chapter 2. Despite Bucharest's rhetorical objections to the NPT, my theoretical prediction is that Romania would lack the relative power to resist Soviet demands to sign the treaty. As predicted, I demonstrate that Romania assented to pressure from Moscow, signaling its type as a subordinate in a sequence of events that past studies do not adequately explain.

The Kremlin viewed Romania as less critical to the strategic balance with NATO than other satellite states like Czechoslovakia, East Germany, and Hungary. Soviet Premier Leonid Brezhnev was more willing to tolerate dissent from Bucharest than from other Soviet clients. But ultimately, refusal to participate in the NPT was a line Brezhnev would not allow Romania to cross. This position would have disrupted Warsaw Pact unanimity and threatened to expand the size of the club of nuclear-armed states. Consequently, Brezhnev reminded Ceaușescu that Romania's security and state survival depended on the USSR while also taking steps to diplomatically isolate Bucharest from its communist allies. In the end, Ceaușescu signed the NPT without delay, type signaling as a subordinate state within the Eastern Bloc. Deeper commitment signaling through ratification would follow shortly after it became clear that Moscow would respect RSR sovereignty and also ratify. Romania has since then been an active member in multilateral nuclear arms control agreements, for example, signing the CTBT in 1996 and ratifying it in 1999.

This chapter proceeds in five sections as it investigates Romania's complicated history with nuclear diplomacy and legally forswearing nuclear weapons. First, I discuss the early Cold War Romanian alliance with the USSR and interest in nuclear energy. Second, I unpack Bucharest's participation in—and objections to—the ENDC negotiations on the NPT. Third, I evaluate internal Warsaw Pact discussions that influenced Ceaușescu's decision-making on signing and ratifying the NPT. Fourth, I highlight post-NPT nuclear activities in Romania and show how my theory of type and commitment signaling applies to Bucharest joining the CTBT. Lastly, I briefly analyze the evidence on-balance and conclude the chapter.

#### Frayed Romanian–Soviet Relations and Nuclear Energy Politics

Romania's patron–client relationship with the USSR is central to understanding its nuclear history. Before the negotiations on the NPT, Bucharest frequently attempted to increase its autonomy from the Soviet Union with some success. Yet, the evidence demonstrates that Romania remained firmly in the Soviet sphere of influence in the lead-up to the negotiations. The early tensions in dyadic relations foreshadow decision-making in Bucharest related to the NPT. That is, Romania tried to express its independence by dissenting to the NPT but was unable to overcome its subordinate ties with the Kremlin, whose leaders demanded that its clients join the treaty.

Soviet plans to dominate Romania date to as early as 1939, when Moscow laid claim to Romanian border regions in secret protocols to the Molotov–

Ribbentrop Non-Aggression Pact with Nazi Germany.<sup>103</sup> The inability of Romanian King Carol II's neutralist government to manage territorial disputes during the Second World War led to a coup d'état and fascist dictatorship under Field Marshal Ion Antonescu. As the war's tide turned, Antonescu's alliance with Adolf Hitler could not prevent a Soviet invasion in 1944 followed by military occupation (Deletant 2006). Romanian subordination had begun.

The subsequent turn in politics saw a full Romanian transition to a unitary communist state by 1947. And in 1948, President Constantin Ion Parhon signed a treaty of friendship, cooperation, and mutual assistance with Joseph Stalin's USSR. The accord allowed for the stationing of as many as 35,000 Red Army troops in Romania (Lanoszka 2014). Bucharest's incorporation into the Kremlin's sphere of influence was now complete. The communist government began a campaign to nationalize industry in the country, providing limited or no compensation to the—predominantly Western European—former owners of such enterprises. Diplomatic and cultural ties with the West were also reduced. In the summer of 1948, Foreign Minister Ana Pauker directed “the closing of French and Italian institutes in Bucharest, as well as the closing of the Italian government's consulate and the American Library (Stanciu 2013a, p. 257).”

Stalin's death five years later in 1953 opened the door for a more autonomous Romanian foreign policy, which would become a feature of the Cold War. Gheorghiu-Dej, who had consolidated power by 1952 and purged his rivals,

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<sup>103</sup> See: “Secret Supplementary Protocols of the Molotov–Ribbentrop Non-Aggression Pact, 1939,” September, 1939, History and Public Policy Program Digital Archive, Doc. 110994, in Raymond James Sontag and James Stuart Beddie, eds., *Nazi–Soviet Relations, 1939–1941: Documents from the Archives of the German Foreign Office*, Washington, DC: U.S. Department of State.

immediately demanded less Soviet interference and the removal of officials sent from Moscow who served in the state's economic institutions (Retegan 2000; Watts 2013). He was aided in this drive for independence by the early rhetorical embrace of détente by Stalin's short-reigning successor Georgy Malenkov. In March 1953, Malenkov stated that "no issue existed in Soviet–American relations that could not be resolved peacefully (Stanciu 2013a, p. 259)." Three months later, the Soviet leader called for the "peaceful coexistence of the two systems (Ulam 1976, p. 151)." Gheorghiu-Dej took the initiative during this time and first approached Washington about the topic of rapprochement in late 1953 (Watts 2013). He was rebuffed, as the Americans simply did not find Romanian autonomy from Moscow credible. They viewed the Romanian approach as a ploy for Soviet influence and espionage.

The U.S. suspicions seemed to be confirmed when Romania was incorporated into Nikita Khrushchev's Warsaw Pact in May 1955 despite early efforts to resist Soviet domination. However, the Warsaw Pact was little more than a symbolic institution before the 1960s (Crump-Gabreëls 2017). Gheorghiu-Dej's quest for autonomy continued unabated, as he and Prime Minister Chivu Stoica again approached U.S. officials in late 1955.

In a formal meeting with Robert Thayer, the U.S. Ambassador to Bucharest, Stoica urged that "relations should be reviewed as whole and close relationships developed on definite reciprocal basis [sic]."<sup>104</sup> Gheorghiu-Dej would express a desire for "close personal, cultural and economic relations" in

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<sup>104</sup> See: "Telegram From the Legation in Romania to the Department of State," Bucharest, November 20, 1955, in *FRUS*, 1955–1957, Vol. XXV, *Eastern Europe*, Doc. 38.

conversation with Thayer at a Yugoslavian National Day party in Bucharest.<sup>105</sup> Thayer also reported that Gheorghiu-Dej and his advisors ignored persistent attempts by the Soviet ambassador to interrupt the conversation. Still, the U.S. ambassador discounted all Romanian approaches during his tenure as part of an attempted Soviet intelligence coup.<sup>106</sup> He maintained this disbelief as Gheorghiu-Dej pushed for the withdrawal of Red Army troops from the RSR (Watts 2013).

Although evidence suggests no such plot to deceive Washington, Thayer had good reason to believe Romania was firmly under Khrushchev's thumb. Soviet troops remained in the country and used the northwestern city of Oradea as their entry point to suppress the 1956 Hungarian Revolution (Verona 1992). Thayer likewise assessed that the PCR government "never swerved in the slightest degree from their adherence to the Soviet line" but kept "the door open for such economic and cultural advantages as it may glean at an appropriate moment."<sup>107</sup> The Romanian balance of trade with the Soviet Union also remained deeply unfavorable, with a deficit in 1956 of approximately 400 million roubles (Gheorghe 2014a). Romanian autonomy appeared to be mostly aspirational.

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<sup>105</sup> See: "Telegram From the Legation in Romania to the Department of State," Bucharest, December 1, 1955, in *FRUS*, 1955–1957, Vol. XXV, *Eastern Europe*, Doc. 40.

<sup>106</sup> See: "Despatch From the Legation in Romania to the Department of State," Bucharest, October 9, 1957, in *FRUS*, 1955–1957, Vol. XXV, *Eastern Europe*, Doc. 268. The U.S. intelligence community used anti-Kremlin leaflet drops in Romania for many years as a tool to weaken Soviet influence in the face of a perceived lack of diplomatic traction. [See: "Report by the Psychological Strategy Board," Washington, July 29, 1953, in *FRUS*, 1950–1955, *The Intelligence Community, 1950–1955*, Doc. 153].

<sup>107</sup> See: "Letter From the Minister in Romania (Thayer) to the Secretary of State," Bucharest, February 6, 1957, in *FRUS*, 1955–1957, Vol. XXV, *Eastern Europe*, Doc. 230.

Romanian dependence on the USSR also had a nuclear dimension. Though Romanian officials tried without success in 1948 to obtain medical radioisotopes from the United States (Gheorghe 2014a), nearly all of Bucharest's early nuclear procurement efforts involved the Soviets. In the wake of Eisenhower's 1953 Atoms for Peace speech, the Soviet Union began its own program for peaceful nuclear assistance in 1955.<sup>108</sup> Gheorghiu-Dej thus created the State Committee for Nuclear Energy (CSEN) that year and quickly signed an agreement for technical cooperation with Moscow (Gheorghe 2014a). Under the agreement, a 2,000-kilowatt Soviet research reactor came online at Măgurele in 1957, followed a year later by a cyclotron for medical isotope production (Gheorghe 2012, 2013b). But due to ideological differences between Gheorghiu-Dej and Khrushchev, the Soviets declined to provide nuclear power reactors to Romania while pledging to do so for other satellite states (Gheorghe 2014a, 2019). This occurred even as Romania's uranium deposits continued to serve as source material for the USSR's nuclear program (Gheorghe 2012).

The subordinate status of Romania on nuclear issues was diplomatic as well as technical. From 1957–1960, Bucharest advocated for the so-called “Stoica Plan” between Romania, Bulgaria, Greece, Turkey, and Yugoslavia. The proposal called for the Balkans to be a conflict-free region and the world's first NWFZ. On the one hand, the Stoica Plan appeared to show an increasingly independent Romanian foreign policy. On the other hand, it was, in actuality, a Kremlin-supported initiative that offered Romania “an ideal opportunity to prove

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<sup>108</sup> See: “National Security Council Report,” Washington, DC, December 13, 1957, in *FRUS*, 1955–1957, Vol. XX, *Regulation of Armaments; Atomic Energy*, Doc. 315.



sustained allegiance to the Soviet Union (Mavrodin 2020, p. 188).” Indeed, the Soviets encouraged the Romanians to call for a Balkan NWFZ to divide NATO and domestically weaken the Greek and Turkish governments by showing them as disinterested in lasting regional peace. NATO governments eventually saw the plan for what it was and duly rejected it (Kourkouvelas 2012). The NATO decision came despite pronounced U.S. interest in avoiding Soviet nuclear deployments in the satellite states of Albania, Bulgaria, and Romania.<sup>109</sup>

Constant pressure on Bucharest from Moscow and perceived discrimination in the nuclear realm would take their toll on Romanian–Soviet relations. In May 1958, the Warsaw Pact Political Consultative Committee (PCC) called a rare special meeting to withdraw Soviet troops from Romania (Crump 2015). In Khrushchev’s eyes, Bucharest was less strategically important than other client states and less worthy of limited Soviet military resources. Gheorghiu-Dej welcomed the newfound autonomy, but the move also weakened the credibility of Soviet nuclear umbrella assurances (Lanoszka 2018b) while maintaining air force and navy bases on RSR territory (Deletant and Ionescu 2004).

In addition to Romania’s newly ambiguous status within the Warsaw Pact, a 1961 Kremlin-sponsored economic plan within the Council for Mutual Economic Assistance (COMECON) further infuriated Bucharest. The plan dismissed Gheorghiu-Dej’s visions of RSR industrialization and called for Romania to become a mere agricultural provider to the Eastern Bloc (Crump 2015; Crump-

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<sup>109</sup> See: “Draft Paper Prepared by N. Spencer Barnes of the Policy Planning Staff,” Washington, DC, June 15, 1959, in *FRUS*, 1958–1960, Vol. X, Part II, *Eastern Europe; Finland; Greece; Turkey*, Doc. 35.

Gabreëls 2017; Lanoszka 2018a). The Romanian leader rejected the plan as an unequal initiative, exploiting ongoing Sino–Soviet tensions to receive support from Peking in doing so (Deletant 2007).<sup>110</sup> The COMECON episode likely emboldened the Romanians, as it showed that it was possible to push back against Soviet schemes in some policy areas.

The Cuban Missile Crisis of October 1962 only exacerbated the fractured ties between Bucharest and Moscow. As had also occurred in the 1961 Berlin Wall Crisis, the Kremlin did not consult the Romanian government as nuclear tensions with the United States escalated. Further, one of the Soviet tankers used in an attempt to break the American blockade of Cuba was named *Bucharest*, seen by Gheorghiu-Dej as “clearly meant to imply Romanian involvement (Watts 2013).”<sup>111</sup>

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<sup>110</sup> Even so, declassified Chinese documents reveal a 1961 assessment that the Kremlin had “an exceedingly high degree” of control and that dependence on Moscow “has become a deciding factor in the determination of Romania’s foreign policy.” [See, e.g.: “Cable from the Party Committee of the Chinese Embassy in Romania, ‘Summary Bulletin of Romania’s Domestic and International Policy and Sino–Romanian Relations since the Moscow Conference,’” August 21, 1961, History and Public Policy Program Digital Archive, Doc. 119981, PRC FMA 109-03791-02, pp. 1–14. Trans. Max Maller].

<sup>111</sup> Additionally, Watts (2013) chronicles an incident during October 1962 when the Soviet flight crew on a visit of Gheorghiu-Dej’s to China vetoed the leader’s orders and flew without clearance over an area of ongoing Sino–Indian conflict. Resolving the situation involved “a number of frantic, last-minute exchanges” to receive flight path clearance from Beijing. The incident significantly contributed to the growing rift within the Eastern Bloc. See also: “Meeting of Dumitru Gheorghiu, Romanian Ambassador to Beijing, at the Chinese Foreign Affairs Ministry Discussing the Over-Flight of Chinese Territory by the Aircraft Transporting Members of the Romanian Delegation Led by Gheorghe Gheorghiu-Dej,” October 23, 1962, History and Public Policy Program Digital Archive, Doc. 116531, A.M.A.E., fond China, problema 20F/1962, Doc. 198 in Ambassador Romulus Ioan Budura, coordinator, *Relațiile Româno-Chineze 1880–1974: Documente*, București, Ministerul Afacerilor Externe, Arhivele Naționale, 2005, pp. 407–408. Trans. Larry L. Watts; “Interview with Former Romanian Foreign Minister, Corneliu Mănescu, Regarding the Romanian Delegation’s Over-Flight of China and Visit to Moscow During the Cuban Missile Crisis (excerpts),” 2008, History and Public Policy Program Digital Archive, Doc. 116532, “Convorbiri neterminate cu Corneliu

The Romanians were shocked. Stoica's successor as Prime Minister, Ion Gheorghe Maurer, criticized Moscow for its lack of consultation both over the placement of nuclear-tipped missiles in Cuba and the potential for East–West conflict involving Romania.<sup>112</sup> Gheorghe Maurer—who with Gheorghiu-Dej only learned about the crisis from the press (Opris 2012)—would later remark that Romanian officials would have learned of a war “from newspapers (Deletant and Ionescu 2004, p. 264).” Further, the Cuban Missile Crisis placed additional strain on the credibility of the Soviet nuclear umbrella. Moscow had previously promised forward-deployed nuclear missiles in Romania but rescinded this pledge in the aftermath of the crisis (Opris 2012; Gheorghe 2013b). Weakened Soviet extended deterrent pledges only compounded the problems with Romania's national defense. Warsaw Pact joint military exercises in the early 1960s had “revealed that Romania could not repel an enemy attack on its own (Lanoszka 2018b, p. 224).”<sup>113</sup>

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Mănescu” [“Unfinished Conversations with Corneliu Mănescu”] in Lavinia Betea, *Partea lor de Adevăr [Their Side of the Truth]*, Bucharest: Compania, 2008, pp. 499–501. Trans. Larry L. Watts.

<sup>112</sup> See: “Conversations between Delegations of the Romanian Workers Party and the Chinese Communist Party in Beijing, 3–10 March 1964 (excerpts),” History and Public Policy Program Digital Archive, Doc. 116566, ANIC, fond C.C. al P.C.R. – Secția Relații Externe, dosar 29/1964, f. 1–124, Doc. 8 in Ambassador Romulus Ioan Budura, coordinator, *Politica Independență a României și Relațiile Româno-Chineze 1954–1975: Documente*, București, Ministerul Afacerilor Externe, Arhivele Naționale, 2008, 134, pp. 151–152. Trans. Larry L. Watts; “Conversations Between Delegations of the Romanian Workers Party and the Communist Party of the Soviet Union in Moscow, July 1964 (excerpts),” History and Public Policy Program Digital Archive, Doc. 116569, ANIC, Fond C.C. al P.C.R., Secția Relații Externe, dosar 35/1964, Vol. II, filele 1–237, Doc. 4 in Vasile Buga, *O vară fierbinte în relațiile româno-sovietice: Convorbirile de la Moscova din iulie 1964 [A Hot Summer in Romanian–Soviet Relations: Conversations in Moscow During July 1964]*, Bucharest: Romanian Academy, National Institute for the Study of Totalitarianism, 2012, pp. 4–197. Trans. Larry L. Watts.

<sup>113</sup> Romania had a total of 13 military divisions facing NATO of “varying degrees of effectiveness and reliability.” [See: “Memorandum from Gen. Cabell to Gen. Taylor,” September 6, 1961, in

Persistent doubts about the USSR as a reliable patron and fear of entrapment in a U.S.–Soviet conflict prompted new directions in Romanian foreign policy. Less than a year after the Cuban Missile Crisis, Gheorghiu-Dej wrote a letter to U.S. President John F. Kennedy. The letter, delivered by Foreign Minister Corneliu Mănescu to Secretary of State Dean Rusk in October 1963, discussed Romanian security policy vis-à-vis Washington and Moscow:

There were four principal points to the message: (1) that Romania had not been informed and did not approve of the Soviet missile deployments; (2) that Romania would not participate in an offensive war against the US provoked by the Soviet Union, and that it would appreciate this fact being taken into account in US targeting policy; (3) that Romanian Armed Forces were fully under national control and should not be considered an adjunct of Soviet military power; and (4) that Romania did not host Soviet nuclear weapons on its territory and that the US was welcome to conduct on-sight [sic] inspections to satisfy itself of the same (Watts 2013).<sup>114</sup>

U.S. diplomat Raymond Garthoff (1995), who discussed the letter with Rusk, has even gone so far as to label it as a Romanian declaration of neutrality in the event of a conflict. One month later, Gheorghe Maurer further distanced Romania from the politics of East–West confrontation. He declared that the country would pursue a foreign policy of peaceful coexistence, disarmament, and nuclear nonproliferation.<sup>115</sup> These changes in Romania’s traditional alignment

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*FRUS*, 1961–1963, Volumes VII, VIII, IX, *Arms Control*; *National Security Policy*; *Foreign Economic Policy*, *Microfiche Supplement*, Doc. 240].

<sup>114</sup> The primary source document remains unpublished. For further analysis see also: Garthoff (1995); Toader (2016).

<sup>115</sup> See also: “Ion Gheorghe Maurer, ‘The Unshakeable Foundation of the Unity of the International Communist Movement’ (excerpts),” November 1963, History and Public Policy Program Digital

with the USSR produced a new “special relationship” with Washington and the beginning of an era of rapprochement with the West. There were now reasons to believe that Romania was becoming less subordinate to the Kremlin.

Romanian openness to dealings with NATO states also took place in the nuclear domain. Officials in Bucharest viewed atomic energy as a technology that would bring about economic growth and national development (Gheorghe 2012, 2013b). As the early Romanian interest was civilian in nature, political science datasets list no weapons ambitions during this period (Singh and Way 2004; Jo and Gartzke 2007; Bleek 2017). But when the Romanians again asked the Soviets to sell them nuclear power reactors in 1960, the Kremlin dismissed the idea (Gheorghe 2014a). Branching out from the influence of the USSR enabled Bucharest to pursue atomic energy deals—without much success—with NATO members Britain, Canada, France, Italy, the United States, and West Germany, as well as with neutral Sweden (Gheorghe 2019). Such assistance was seen as necessary if Romania was to have a nuclear energy program given Soviet reluctance and delays in providing technology.<sup>116</sup>

The RSR attempt to distance the country from Soviet influence also involved considerable warming of diplomatic ties with the People’s Republic of China (PRC). Romania was a constant proponent of greater inclusion of

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Archive, Doc. 116565, Doc 6 in Ambassador Romulus Ioan Budura, *Politica Independență* (2008), pp. 104–118; Ion Gheorghe Maurer, “Temelia de neclintit a unitatii miscarii comunist international.” *Problemy Mira i Sotsializma* [*Problems of Peace and Socialism*], 4(11): 11–22. Trans. Larry L. Watts.

<sup>116</sup> See: “Memorandum of Conversation,” Washington, DC, May 18, 1964, in *FRUS*, 1964–1968, Vol. XVII, *Eastern Europe*, Doc. 142.

communist China in UN activities during the 1950s and 1960s.<sup>117</sup> And as I discussed above, Gheorghiu-Dej used the Sino–Soviet split in the early 1960s to win Chinese support against COMECON economic plans he disliked (Deletant 2007). RSR officials also complained to their Chinese counterparts about their treatment by Khrushchev during the Cuban Missile Crisis.<sup>118</sup> The enhanced relationship with Peking would eventually allow Romania to become a mediator between the Chinese and the Soviets (Selvage 2001). The PRC also gained influence over Romanian foreign policy, pushing Bucharest to oppose many Warsaw Pact positions on the NPT both within the PCC and the ENDC (Crump 2015; Crump-Gabreëls 2017).

When international discussions arose over a treaty for nuclear nonproliferation in the early 1960s, the Romanian geostrategic position was complex, to say the least. Bucharest was a member of the Warsaw Pact and integrated into its security and policy-making organs. Chinese and U.S. officials assessed with good cause that Romania was highly subordinate to the whims of its Soviet patron.<sup>119</sup> However, Gheorghiu-Dej had made strides to carve out an

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<sup>117</sup> See, e.g.: “Instruction From the Department of State to Certain Diplomatic Missions,” Washington, DC, August 3, 1957, in *FRUS*, 1955–1957, Vol. XI, *United Nations and General International Matters*, Doc. 78.

<sup>118</sup> See: “Conversations between Delegations of the Romanian Workers Party and the Chinese Communist Party in Beijing, 3–10 March 1964 (excerpts).” “Conversations between Romanian Leader Gheorghe Gheorghiu-Dej and Chinese Ambassador Liu Fang, Referring to Bilateral Relations and the Soviet–Chinese Ideological Conflict Snagov, 5 June 1964 (excerpts),” History and Public Policy Program Digital Archive, Doc. 116568, ANIC, fond C.C. al P.C.R. – Secția Relații Externe – China, dosar 5/1964, f. 28-53, Doc. 219 in Ambassador Romulus Ioan Budura, *Relațiile Româno-Chineze* (2005), pp. 463–483. Trans. Larry L. Watts.

<sup>119</sup> See: “Letter From the Minister in Romania (Thayer) to the Secretary of State”; “Despatch From the Legation in Romania to the Department of State”; “Cable from the Party Committee of the

independent line of foreign policy from Moscow, including improved relations with the United States, NATO, and China. Meanwhile, the Romanian quest for peaceful civilian nuclear energy continued with, at best, limited success. The nature of the Romanian response to the NPT seemed far from predictable.

### Negotiating the NPT in Geneva

Understanding the Romanian position on the NPT requires an examination of external posturing in the ENDC negotiations as well as internal Warsaw Pact discussions. Romania was an active participant in multilateral nuclear arms control from the very beginning. Under Gheorghiu-Dej, Bucharest was a member of the UN's Ten-Nation Disarmament Committee formed in 1959 to consider such issues.<sup>120</sup> Romania was also a member of the ENDC at its inception in 1961, with Ceaușescu—after Gheorghiu-Dej's death—overseeing participation in formal negotiations on the NPT from 1965–1968.<sup>121</sup> The historical record shows Romania taking an independent stance at the ENDC talks, objecting to the treaty in the manner of a status dissenter. Table 3 in Chapter 2 identifies such states as those that seek enhanced global recognition and object to the balance of power reified by an agreement. My theory predicts that status dissenters will not sign the NPT.

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Chinese Embassy in Romania, 'Summary Bulletin of Romania's Domestic and International Policy and Sino-Romanian Relations since the Moscow Conference.'

<sup>120</sup> See: DC/144. The Ten-Nation Disarmament Committee met from 1959–1960 before being replaced by the ENDC in 1961. It had ten members, five from each of the blocs: Britain, Bulgaria, Canada, Czechoslovakia, France, Italy, Poland, Romania, the Soviet Union, and the United States. Eight non-aligned members were added to form the ENDC: Brazil, Burma, Egypt, Ethiopia, India, Mexico, Nigeria, and Sweden. The French declined to participate in the ENDC talks due to them being driven by the Americans and the Soviets, leaving their seat open.

<sup>121</sup> See: A/C.1/L.339.

Consequently, reviewing Bucharest's positions only in the forum of the ENDC would not accurately explain why Romania quickly signed and ratified the NPT. It is still essential to understand this posturing, which was overwhelmed by behind-the-scenes allied pressures in the Warsaw Pact. Ultimately, Romania type signaled as a subordinate despite defiance of its Soviet patron in the multilateral ENDC context.

There were early signs that Romania would be a troublesome actor in the formal NPT negotiations in Geneva. In November 1965, Ceaușescu's representatives abstained in two cases on votes that would allow the ENDC to move forward on the NPT. First, Romania did not support the UN First Committee on Disarmament and International Security adopting Egyptian representative Ismail Fahmy's Eight-Party Draft from the non-aligned states on fundamental treaty principles (Shaker 1980a).<sup>122</sup> Second, when the UNGA then voted to adopt the draft as part of UNSC Resolution 2028, Bucharest again abstained.<sup>123</sup> However, it is worth emphasizing that Romania abstained rather than dissented in these votes that the Kremlin strongly supported. One month after the votes, U.S. officials assessed that Romanian autonomy was "unpleasant" for the Soviets but had not "exceeded proportions that Moscow can accept."<sup>124</sup>

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<sup>122</sup> The vote was 83–0 with six abstentions.

<sup>123</sup> See: A/RES/2028(XX); "Memorandum of Conversation," Washington, DC, February 8, 1967, in *FRUS*, 1964–1968, Vol. XI, *Arms Control and Disarmament*, Doc. 180. This time the vote was 93–0 with five abstentions.

<sup>124</sup> See: "Memorandum of Conversation," Paris, December 13, 1965, in *FRUS*, 1964–1968, Vol. XV, *Germany and Berlin*, Doc. 134.



When the treaty negotiations moved forward without Romanian support, Ceaușescu's strategy turned to delay and distraction while extracting concessions from the superpowers. NPT historian Ambassador Mohamed Shaker (1980a, p. 78) recalls: "It was the only Eastern European delegation to submit proposals and amendments concerning treaty drafts."<sup>125</sup> For example, at one point in late-stage negotiations in 1968, "the Romanian envoy advanced a proposal for eleven burdensome amendments in an attempt to throw a wrench in the whole negotiating works (Hunt 2013, p. 387)." Ironically, PCR delegates would even criticize the draft NPT preamble for not referencing Resolution 2028 language, which they had not supported in the UNGA vote.<sup>126</sup>

The Romanians had many doubts about, and objections to, the treaty. They pertained to:

- Its discriminatory separation of nuclear "haves" (the NWS) and "have-nots" (the NNWS);
- Its efficacy in promoting disarmament;
- Its ability to protect the security of the NNWS;
- Its guarantees of the right to peaceful uses of nuclear energy;
- Its treaty amendment process.

Romanian disagreements with the discriminatory nature of the NPT were characteristic of the positions of a status dissenter, as they pointed to a rejection of the treaty's distribution of power. These points were also unsurprising

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<sup>125</sup> See also: "Memorandum for the Record," Washington, DC, May 15, 1968, in *FRUS*, 1964–1968, Vol. XVII, *Eastern Europe*, Doc. 161.

<sup>126</sup> See: ENDC/199; DC/230.

given the state's tepid relationship with Washington and fraying ties with Moscow. The treaty's origins lie in U.S. and Soviet initiatives to limit the club of nuclear-armed states (Coe and Vaynman 2015; Popp 2017). Even though the ENDC met for much of the 1960s, the superpowers only really considered treaty input from the NNWS in 1967 and 1968 (Popp 2017). This type of collusion was central to Romanian fears about being a small state in an inherently unfair bipolar world.

Because Taiwan maintained the Chinese seat in the UN until 1971, Romanian officials were similarly unhappy with a perceived attempt to disarm communist China. Peking was not a member of the ENDC. Pressure from China shaped this RSR position, as the PRC presented the NPT to its Romanian comrades "as an action directed against the Chinese."<sup>127</sup> Bucharest would also urge the French, who opposed the U.S.–Soviet collusion and declined to participate in the ENDC as a result, to use the discrimination argument to resist the agreement (Hunt 2013).

While attempts to dispute anti-PRC language in the NPT were successful, the treaty still discriminated against Bucharest. The final text of Article IX set detonation of a nuclear test explosion by January 1, 1968, as the benchmark for distinguishing between the five permitted NWS and the remaining NNWS.<sup>128</sup> Ceaușescu's Romania would be among the nuclear "have-nots" if it were to abide

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<sup>127</sup> See: "Protocol No. 34 of the Romanian Executive Political Committee Meeting," October 11, 1966, History and Public Policy Program Digital Archive, Doc. 122589, Doc. 10 in Niculescu-Mizil, *România și războiul americano-vietnamez* (2008), pp. 191–201, Arhiva Comitetului Executiv al CC al PCR, dosar nr. 2689, 5.XI.1966. Trans. Larry L. Watts.

<sup>128</sup> See: NPT, Art. IX. Given this date, the five permitted NWS are the P5: Britain, China, France, the Soviet Union, and the United States.

by the parameters of the accord. The treaty language thus represented the consolidation of an unequal status quo and distribution of power that was disadvantageous to Romania.

Since the treaty would forbid Romania from acquiring nuclear arms, its representatives in Geneva set out to ensure disarmament by the NWS. Romania's attempts to oppose Articles I and II of the NPT preventing horizontal nuclear proliferation were deeply unsuccessful (Gheorghe 2013a).<sup>129</sup> These were, after all, the core purpose of a treaty designed to prevent nuclear proliferation. Now, Bucharest sought to promote the treaty's "grand bargain" between NNWS nonproliferation and NWS disarmament. If the NPT's drive to stop horizontal proliferation would leave Romania disarmed, PCR officials sought for it to also counter and reverse vertical proliferation by the NWS and improve the balance of power in Bucharest's favor.

The Romanian delegation to the ENDC consequently expressed its disapproval over the lack of adequate disarmament provisions in the August 1967 treaty drafts from the superpowers.<sup>130</sup> In a forceful October 1967 working paper, Romania called for preambular language stipulating, "The Treaty should be a step towards the achievement of general and complete disarmament and, more particularly, nuclear disarmament." Moreover, Bucharest desired no ambiguity over disarmament, proposing a new paragraph in the preamble:

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<sup>129</sup> See: NPT, Art. I, II.

<sup>130</sup> See: ENDC/199; DC/230. For the texts of the draft treaties see: ENDC/192.rev1; ENDC/193.rev1.

Recognizing that the danger of a nuclear war can be eliminated only by the cessation of the manufacture of nuclear weapons, the prohibition of the use of nuclear weapons, and the destruction of all existing stockpiles of such weapons and of the means of their delivery.<sup>131</sup>

The United States and the Soviet Union predictably rejected such language, but that did not prevent Romanian diplomats from introducing similar provisions—to no avail—in March 1968. In doing so, Romania also called for concrete “nuclear-disarmament measures” within the treaty.<sup>132</sup> Still, the Romanian working paper did influence the writing of the NPT’s preamble and Article VI on nuclear disarmament. When the treaty opened for signature, its wording on disarmament was more extensive than representatives from Washington and Moscow had hoped (Harries 2014).<sup>133</sup>

Romania would incur an ex-ante status cost by being a NNWS and could also face future nuclear security threats. While Bucharest confronted no immediate attempt at nuclear blackmail, the Romanians advanced proposals at the ENDC for negative security assurances from the NWS (Gheorghe 2013a). Since Romania had no forward-deployed nuclear weapons on its sovereign territory, the country was a supporter of the Soviet “Kosygin formula.”<sup>134</sup> The 1966 proposal called for negative security assurances for such states. Kosygin’s plan failed because the United States and NATO saw it as an attempt to pressure West

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<sup>131</sup> See: ENDC/199, para. 2.

<sup>132</sup> See: ENDC/PV.376.

<sup>133</sup> For the treaty’s language on disarmament see: NPT, Art. VI.

<sup>134</sup> See: ENDC/167.

Germany to remove U.S. weapons from its territory (Shaker 1980b; Bunn and Timerbaev 1992).<sup>135</sup> The October 1967 Romanian working paper was also explicit in its call for negative security assurances. In it, the Romanians requested new language indicating:

Nuclear-weapon States Parties to this Treaty solemnly undertake never in any circumstances to use or threaten to use nuclear weapons against non-nuclear-weapon States which undertake not to manufacture or acquire nuclear weapons.<sup>136</sup>

The United States rejected the Romanian amendment, as it did with all other proposals on negative security assurances—predominantly from the ENDC's eight non-aligned members. Romania would re-introduce the proposal in January 1968, only for it to be vetoed again (Shaker 1980b). Washington's counter of positive security assurances to the NNWS drew support from the RSR, but it also was not adopted.<sup>137</sup> In the end, the superpowers did endorse the concept of positive security assurances at the UNSC to gain signatories to the treaty.<sup>138</sup> Few states were satisfied by Resolution 255, however, as it was vague in describing the actual details of such assurances (Adeniji 1995).

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<sup>135</sup> For the U.S. JCS position on the negative security assurances proposal see: "Joint Chiefs of Staff Memorandum for the Secretary of Defense, 'Security Assurances and the Nonproliferation Treaty (NPT),' " April 17, 1968, in NSA EBB 253, "'The Impulse towards a Safer World' 40th Anniversary of the Nuclear Nonproliferation Treaty," Doc. 22.

<sup>136</sup> See: ENDC/199.

<sup>137</sup> See: ENDC/165.

<sup>138</sup> See: SC/RES/255.

There were also Romanian concerns that the NPT would be a tool to prevent the NNWS from obtaining civilian nuclear energy programs. This possibility of commercial barriers was particularly troubling to PCR officials, given their lack of success in obtaining power reactors from both the Soviets and the West. Indeed, recalling the NPT negotiations, one Romanian official stated: “The right of every State to use nuclear energy for peaceful purposes was inherent in its sovereign right to independent economic development, and was an essential attribute of national sovereignty and independence (Shaker 1980a, p. 294).” The official’s language epitomizes the rhetoric of a status dissenter in my typology.

The October 1967 Romanian working paper took issue with the lack of credible civilian energy guarantees in the U.S. and Soviet draft treaties. The Ceaușescu regime viewed as insufficient the draft treaties’ Article IV promise of “the inalienable right [...] to nuclear energy for peaceful purposes without discrimination.”<sup>139</sup> Thus, the working paper called for the inclusion of the clause “on the basis of equality” as well as language noting that the article applied to all states, “whether they possess nuclear weapons or not.”<sup>140</sup> After all, the existence of the U.S. Atoms for Peace Program and its Soviet analog had done little to advance Romanian nuclear power aspirations. Instead, other states with closer patron–client relationships had become the beneficiaries of technical assistance and access to the civilian nuclear marketplace.

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<sup>139</sup> See: ENDC/192.rev1; ENDC/193.rev1.

<sup>140</sup> See: ENDC/199, para. 4.

Like Italy, Romania also sought guaranteed access to special fissionable materials for use in the production of medical radioisotopes or reactor fuel (Swango 2014). None of the RSR amendments to Article IV were accepted by the United States and the Soviet Union, though the Romanians did have mixed success when supporting proposals from non-aligned countries (Timerbaev 1999). Based on nuclear energy assurances alone, it seemed as if Bucharest would likely decline to sign the treaty by type signaling as a status dissenter.

The IAEA's system of safeguards further challenged notions of Romanian autonomy. Nuclear energy deals Bucharest pursued with Britain and the United States had previously stalled because of objections to safeguards (Gheorghe 2013b, 2014a). For the Romanians, safeguards presented a considerable sovereignty cost. The logic behind this thinking was two-fold. First, Romanian officials saw the potential presence of international inspectors on their territory as tantamount to sovereign interference. And second, there was an overarching concern that safeguards would be a tool to prevent the NNWS from having readily available access to civilian nuclear energy technologies (Gheorghe 2014a). Again, the Romanian focus on autonomy and status was apparent.

Throughout the ENDC negotiations, Romania repeatedly advocated for the NPT's Article III on safeguards to apply only to fissile materials (Shaker 1980b). The intent was to limit sovereign interference and protect the NNWS Article IV right to peaceful nuclear energy. In one representative example, the Romanian delegate, Ambassador Nicolae Ecobesco, gave a speech to the ENDC

in March 1968 as negotiations were drawing toward their eventual end. Ecobesco covered the full scope of the Romanian objection to overreaching safeguards:

In its present form, [A]rticle III provides for an extension of the safeguards system of the International Atomic Energy Agency to fields which, by their nature, involve no danger of the proliferation of nuclear weapons. In order to ensure complete agreement between the scope of the safeguards and the purpose laid down by the treaty, the area of control must be defined in such a way as to cover only those activities of States which might enable nuclear energy to be diverted from its peaceful uses to the manufacture of nuclear weapons. Otherwise, control may put a brake on the activities of States devoted to the peaceful use of nuclear. Those are the considerations underlying our proposal to include in [A]rticle III, before the present paragraph 1, a new paragraph worded as follows: "The control established by this Article shall have the exclusive purpose of preventing the use of special fissionable materials for the production of nuclear weapons or other nuclear explosive devices by non-nuclear-weapon States Party to the Treaty. Control shall be applied to such peaceful nuclear activities of non-nuclear-weapon States Party to the Treaty as, by their nature and the quantities of source and special fissionable materials which they produce, process or use, may lead to the proliferation of nuclear weapons."<sup>141</sup>

Here again, however, the Romanians failed to gain any traction in relaxing the IAEA safeguards system. Article III of the NPT, as agreed, restricts the provision of special fissionable materials to NNWS "for peaceful purposes, unless the source or special fissionable material shall be subject to the safeguards."<sup>142</sup>

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<sup>141</sup> See: ENDC/PV.176, para. 11–12.

<sup>142</sup> See: NPT, Art. III.



Lastly, Bucharest voiced dissent to how the superpowers had laid out the process of amending the NPT in their August 1967 draft treaties. Given the significant number of Romanian amendments to the draft treaties that were considered but rejected, Ceaușescu and his advisors endeavored to preserve national autonomy. There was little interest in having to adhere to treaty provisions the regime did not support. Unfortunately for the Romanians, Article VII of the draft treaties stipulated that amendments would be adopted if they received a simple majority vote from the States Parties, including, of course, all of the NWS.<sup>143</sup> Ecobesco stood with the delegation of Nigeria in insisting that such a procedure would be “undemocratic.” He further warned, “Amendments made in that way, whatever the nature of the intention underlying them, could entail injustices to one or several parties to the treaty.”<sup>144</sup> Like so many other Romanian proposals, this one, too, was rejected by the ENDC. The voting rules on Article VII remained in the final version of the treaty for signature.<sup>145</sup> Still, it is important to note that states must ratify such amendments in order to be legally bound by them. For this reason, the Romanian objection to the NPT on these grounds seemed to be driven by principles related to status.

The historical evidence from the multilateral negotiations over the NPT appears to present a straightforward narrative. Romania assumes the role of a status dissenter—a state whose leaders fear that the balance of power enshrined

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<sup>143</sup> See: ENDC/192.rev1; ENDC/193.rev1.

<sup>144</sup> See: ENDC/PV.348, para. 16, 18.

<sup>145</sup> See: NPT, Art. VII.

by a multilateral arms control treaty will minimize their role on the international stage. Consequently, Ceaușescu's diplomats objected to the NPT at every turn in Geneva. They insisted that it divided the world into unequal camps of the nuclear-armed and the disarmed. They claimed that it might prevent Romania from obtaining civilian nuclear energy for peaceful purposes. They cautioned that its system of IAEA safeguards would enable unnecessary sovereign interference. And they chastised its amendment process as an undemocratic attempt to suppress the voices of smaller states. As Gheorghe (2013a, p. 12) notes, this line of autonomy from the Soviets "brought [Romania] considerable image benefits" and was often seen "as proof that Romania was pursuing its own national interests through its independent foreign policy."

But if these objections to the NPT offered the full story, why did Ceaușescu sign the treaty on the day it opened for signature? After all, the superpowers rejected almost all of the proposed Romanian amendments to the treaty. I argue that the Romanian leadership had many substantive reasons to criticize the treaty, so Bucharest often appeared as a status dissenter within the ENDC. Declassified U.S. documents from the time assess that the Romanian rhetoric was independence posturing that would not prevent Bucharest from joining the NPT.<sup>146</sup> The reason for this was obvious: While talks were occurring in Geneva,

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<sup>146</sup> See: "Acting ACDA Director Archibald Alexander to Secretary of State, 'Current NPT Issues,'" September 22, 1967, with attached report on "World Reaction Toward the NPT," in NSA EBB 629, "The Nuclear Non-Proliferation Treaty and the Mexican Amendments: The Negotiation Record," Doc. 9, p. 8 (supplement); "Airgram From the Embassy in Romania to the Department of State," Bucharest, January 19, 1968, in *FRUS*, 1964–1968, Vol. XVII, *Eastern Europe*, Doc. 158.

a more important deliberation process for the RSR was happening within the Warsaw Pact. Romania was, in fact, a subordinate state, not a status dissenter.

### Negotiating the NPT with Moscow

Foreign policy rhetoric at the ENDC aside, Romania was a subordinate state that depended on the Soviet Union and the Eastern Bloc for military protection and economic prosperity. Brezhnev was willing to tolerate some level of independence from Bucharest in multilateral fora, but declining to sign the NPT would have carried stark consequences for Romania. As the historical record shows, Romania simply lacked the relative strength to resist coercive pressure from its Soviet patron. My analysis of Romania as a subordinate stands in contrast to what a close reading of the ENDC negotiation records alone would reveal—Bucharest as a status dissenter. I find that when the Kremlin pressured Romania, its type and commitment signaling on the treaty followed. There was, however, a brief delay between signature and ratification when RSR officials feared an invasion in the aftermath of Soviet interference in Czechoslovakia. The commitment signaling of ratification only became possible when Bucharest and Moscow rekindled their security relationship, eliminating the risk of conflict.

Early Romanian objections to the treaty in a Warsaw Pact context date back to 1963. It was during this time that Kennedy was again seriously considering his predecessor's—Dwight D. Eisenhower—MLF proposal. The MLF would involve multinational NATO crews on submarines armed with U.S. nuclear weapons to increase shared nuclear decision-making in the Atlantic Alliance (Kohl 1965; Bunn 1992). In October 1963, Khrushchev indicated his willingness to

cooperate with Washington and allow the MLF to be permissible under the NPT. The move shocked the USSR's Warsaw Pact allies, including the RSR under Gheorghiu-Dej, who had already felt abandoned in the Berlin Wall and Cuban Missile Crises (Brands 2007). By presenting the possibility of the Federal Republic of Germany (FRG, West Germany) obtaining nuclear weapons, it showed further weakness to Khrushchev's internal Soviet critics. Khrushchev, who faced constant pressure on the homefront, was eventually ousted by his protégé Brezhnev in October 1964 (Taubman 2003).

Brezhnev's rise to power that month coincided with the first Chinese nuclear explosive test. Now, the USSR had to take the criticism of the MLF by its Eastern European clients seriously, lest it lose them to a new nuclear protector in the Sino-Soviet split (Selvage 2001; Crump-Gabreëls 2017). Some of the most vociferous opposition to the NPT in the Eastern Bloc had come from the GDR and Poland regarding the MLF. But when the Kremlin did an about-face and rejected the idea of the MLF's acceptability under the NPT, East German leader Walter Ulbricht and Polish leader Władysław Gomułka closed ranks with Moscow (Crump-Gabreëls 2017). Romania took a different position, with its leaders viewing Peking as another potential nuclear patron in the communist world (Alexiev 1981). Unlike the Soviets, the Chinese did not support the NPT.

The Soviets convened their allies for a PCC meeting in Warsaw in January 1965. They intended to achieve unanimous endorsement of the NPT within the Warsaw Pact to present a unified front at the ENDC. Two important sets

of meetings involving Romanian officials had occurred before the PCC met.<sup>147</sup> First, the Chinese Ambassador to Romania, Liu Fan, had secured support from Bucharest through Politburo representative Emil Bodnarus for blocking consensus in the Warsaw Pact on the NPT (Crump 2015; Crump-Gabreëls 2017). As noted in the previous section, the Chinese viewed the treaty as a joint U.S.–Soviet attempt to disarm them. Second, Gheorghiu-Dej and Mănescu had met with Gomulka and Ulbricht in meetings to discuss a GDR draft NPT (Crump-Gabreëls 2017).<sup>148</sup> The Romanians argued that the MLF and the larger global nonproliferation issue were unsuitable for the UN setting because they risked unfairly targeting the PRC nuclear program. In the meeting with Gomulka, Romanian officials urged an international communist conference so that no country would be unduly subjected to the will of others.<sup>149</sup>

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<sup>147</sup> Mănescu also met with Rusk in early January and conveyed Romanian fears about the MLF to his U.S. counterpart. The conversation indicated that concerns about the proposal remained strong, even if Bucharest was unable to find common ground on the broader NPT issue with its Warsaw Pact allies. [See: “Telegram From the Department of State to the Embassy in Romania,” Washington, DC, January 5, 1964, in *FRUS*, 1964–1968, Vol. XVII, *Eastern Europe*, Doc. 147].

<sup>148</sup> For the draft treaty text see: “Draft of a Treaty on Nonproliferation of Nuclear Weapons,” January 19, 1965, Parallel History Project on Cooperative Security (PHP), Warsaw Pact Records Collection, [http://www.php.isn.ethz.ch/kms2.isn.ethz.ch/serviceengine/Files/PHP/17919/ipublicationdocument\\_singledocument/8675e8eb-574f-46b8-bcfc-e45c9a44745f/de/Draft\\_Nonproliferation\\_Treaty\\_1965\\_13.pdf](http://www.php.isn.ethz.ch/kms2.isn.ethz.ch/serviceengine/Files/PHP/17919/ipublicationdocument_singledocument/8675e8eb-574f-46b8-bcfc-e45c9a44745f/de/Draft_Nonproliferation_Treaty_1965_13.pdf).

<sup>149</sup> See: “Memorandum of Discussions between Romanian Workers’ Party leadership and Polish United Workers’ Party leadership,” January 18, 1965, History and Public Policy Program Digital Archive, Doc. 112977, ANIC, fond Archive of the Politburo of the Central Committee of the Romanian Workers’ Party, no. 62, 2.3.1965, in “Romania and the Warsaw Pact, 1955–1989,” *CWIHP Document Reader 1*, pp. 185–95.

In Warsaw, Brezhnev, Gomulka, and Ulbricht all condemned the MLF as a means for West German proliferation.<sup>150</sup> They maintained that the only way to prevent such an emergent security threat was Warsaw Pact unanimity on a robust NPT. Gheorghiu-Dej and Maurer saw the matter differently.<sup>151</sup> For example, the Romanian president warned that the treaty was “having as its goal the condemnation of China for the tests it conducted with an atomic weapon.”<sup>152</sup> The RSR effectively used the consensus-based intergovernmental nature of the Warsaw Pact to veto the alliance’s endorsement of the NPT. The communiqué

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<sup>150</sup> See: “Speech by the First Secretary of the CC of the CPSU (Leonid I. Brezhnev),” January 19, 1965, PHP, Warsaw Pact Records Collection, [http://www.php.isn.ethz.ch/kms2.isn.ethz.ch/serviceengine/Files/PHP/17935/ipublicationdocument\\_singledocument/860ad930-5887-438c-881b-55cb86cce3f0/de/Speech\\_Brezhnev\\_1965\\_4\\_1.pdf](http://www.php.isn.ethz.ch/kms2.isn.ethz.ch/serviceengine/Files/PHP/17935/ipublicationdocument_singledocument/860ad930-5887-438c-881b-55cb86cce3f0/de/Speech_Brezhnev_1965_4_1.pdf); “Speech by the First Secretary of the PZPR (Władysław Gomulka),” January 19, 1965, PHP, Warsaw Pact Records Collection, [http://www.php.isn.ethz.ch/kms2.isn.ethz.ch/serviceengine/Files/PHP/17932/ipublicationdocument\\_singledocument/7b0a43bb-ea98-4daa-b2c3-35d8d2eaed37/de/Speech\\_Gomulka\\_1965\\_5\\_entire.pdf](http://www.php.isn.ethz.ch/kms2.isn.ethz.ch/serviceengine/Files/PHP/17932/ipublicationdocument_singledocument/7b0a43bb-ea98-4daa-b2c3-35d8d2eaed37/de/Speech_Gomulka_1965_5_entire.pdf); “Speech by the East German Head of State (Walter Ulbricht),” January 19, 1965, PHP, Warsaw Pact Records Collection, [http://www.php.isn.ethz.ch/kms2.isn.ethz.ch/serviceengine/Files/PHP/17942/ipublicationdocument\\_singledocument/6c94105f-d4bf-48a9-bb7b-e3cac411efc7/de/Speech\\_Ulbricht\\_1965\\_3.pdf](http://www.php.isn.ethz.ch/kms2.isn.ethz.ch/serviceengine/Files/PHP/17942/ipublicationdocument_singledocument/6c94105f-d4bf-48a9-bb7b-e3cac411efc7/de/Speech_Ulbricht_1965_3.pdf); “Minutes of the Meeting of the Political Consultative Committee of the Warsaw Pact Member States, Warsaw (Romanian delegation),” January 20, 1965, History and Public Policy Program Digital Archive, Doc. 113838, Romanian National Central Historical Archives, fond CC of RCP-Directorate of International Affairs, folder 15/1965, pp. 112–127. Trans. Mircea Munteanu; “Minutes of the Meeting of the Political Consultative Committee of the Warsaw Pact Member States, Warsaw (Polish delegation),” January 20, 1965, History and Public Policy Program Digital Archive, Doc. 111612, AAN, KC PZPR, sygn. 2662, pp. 152–190.

<sup>151</sup> See: “Speech by the Romanian Head of State (Gheorghe Gheorghiu-Dej),” January 19, 1965, PHP, Warsaw Pact Records Collection, [http://www.php.isn.ethz.ch/kms2.isn.ethz.ch/serviceengine/Files/PHP/17926/ipublicationdocument\\_singledocument/41d1ec22-01bc-4de3-8db1-0c1fd5367f25/de/Speech\\_GheorghiuDej\\_1965\\_7.pdf](http://www.php.isn.ethz.ch/kms2.isn.ethz.ch/serviceengine/Files/PHP/17926/ipublicationdocument_singledocument/41d1ec22-01bc-4de3-8db1-0c1fd5367f25/de/Speech_GheorghiuDej_1965_7.pdf); “Minutes of the Meeting of the Political Consultative Committee of the Warsaw Pact Member States, Warsaw (Romanian delegation);” Minutes of the Meeting of the Political Consultative Committee of the Warsaw Pact Member States, Warsaw (Polish delegation).”

<sup>152</sup> See: “Minutes of the Meeting of the Political Consultative Committee of the Warsaw Pact Member States, Warsaw (Polish delegation).”

from the meeting in Warsaw drew attention to concerns about the FRG and the MLF while also calling for a nonaggression treaty with NATO. One thing the communiqué did not discuss, however, was anything related to an accord on nuclear nonproliferation.<sup>153</sup>

The veto of the NPT surprised the Soviets, who mounted a campaign to convince Romania to change its position. Brezhnev dispatched Lev Tolkunov, of the Soviet Foreign Ministry, to Bucharest for February 1965 discussions with Bodnaras and Ceaușescu (Crump 2015). Ceaușescu would become the Romanian leader in March that year after Gheorghiu-Dej succumbed to lung cancer. Tolkunov appealed to his interlocutors to accept the NPT on the basis of international communist solidarity. By all accounts, the Romanians listened to Tolkunov without shifting their views. Bondaras even “duly reported his entire conversation with Tolkunov a day later to the Chinese diplomat Van Tung (Crump 2015, p. 181).” The Soviets would propose the creation of an NPT to the UNGA in October 1965, but the Romanian dissent prevented the draft treaty from being introduced as a Warsaw Pact initiative (Crump-Gabreëls 2017).<sup>154</sup>

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<sup>153</sup> See: “Communiqué of the Warsaw Summit of the Political Consultative Committee,” January 20, 1965, PHP, Warsaw Pact Records Collection, [http://www.php.isn.ethz.ch/kms2.isn.ethz.ch/serviceengine/Files/PHP/17910/ipublicationdocument\\_singledocument/1c6a2465-e645-46aa-b4a4-7b8207fae304/en/Communiqu%E9\\_1965\\_19.pdf](http://www.php.isn.ethz.ch/kms2.isn.ethz.ch/serviceengine/Files/PHP/17910/ipublicationdocument_singledocument/1c6a2465-e645-46aa-b4a4-7b8207fae304/en/Communiqu%E9_1965_19.pdf). Article I of the NPT and the policy of no nuclear weapon transfers from the NWS to the NNWS would eventually mark the final death knell for the MLF proposal.

<sup>154</sup> These types of moves by the Romanians led the Soviets to exclude them from much of the Warsaw Pact’s strategizing about the NPT. Former Soviet arms control negotiator Roland Timerbaev (1999) recalled that Moscow would restrict this information from Bucharest in order to prevent leaks to U.S.-allied delegations to the ENDC.

To try to achieve Eastern Bloc unity on the treaty, the Soviets adopted a new strategy. In January 1966, Brezhnev began pushing for the Warsaw Pact to become a supranational entity. He sent Deputy Foreign Minister Leonid Il'ichev to Bucharest to discuss the NPT and win Ceaușescu's support for the new configuration. Ceaușescu rebuffed the Soviet official by insisting that China must be consulted over the treaty and that adopting it would hinder communist attempts to engage France, which opposed the NPT under President Charles De Gaulle (Gheorghe 2014a). Il'ichev offered a bold rejoinder, reminding the Romanian leader of his country's reliance on the Soviet nuclear umbrella. Romania depended on the USSR as a security sponsor, making it unnecessary for Bucharest to pursue the bomb from the Soviet perspective. The Kremlin also expected loyalty from the Romanians on the NPT, given the nuclear protection they provided to their client.

Brezhnev himself would visit Romania in May to reassure Ceaușescu of the credibility of Soviet nuclear assurances. This pledge was seen as essential for Romania to embrace a treaty on nuclear nonproliferation. Brezhnev forcefully stated, "If a bomb is dropped in Romania, then in thirty seconds a retaliatory bomb drops on the country in which the first bomb originated (Gheorghe 2014a, pp. 123–124)." There was a catch, of course, as the Soviet Premier noted that nuclear protection was conditional upon Bucharest accepting the proposed institutional arrangements of the Warsaw Pact. Since the supranationalism was intended to create unanimity on the NPT, Brezhnev implied that the provision of the nuclear umbrella depended on Romania accepting Moscow's position on the treaty.



Though Ceaușescu did not accept supranationalism at the PCC's July 1966 meeting in Bucharest, the Kremlin had become more aggressive in its advocacy for the NPT.<sup>155</sup> If Romania were to keep resisting Soviet proposals—particularly in an NPT context—it could no longer count on Moscow for its security. Such coercive threats almost certainly resonated in Bucharest. Romania was, after all, a relatively weak state with little ability to independently defend itself from any potential NATO attack (Lanoszka 2018b). For all the Romanian rhetoric about autonomy and status, rejecting the NPT would bear risks for state survival if the Soviets abandoned Bucharest. Romania legally forswearing nuclear weapons was a higher priority for the Kremlin than its previous agricultural arrangements.

Still, Romanian reluctance to support the NPT forced the other states of the Warsaw Pact to find alternative means to endorse the negotiation of the treaty. For instance, Ceaușescu opted not to send representatives to the European Communist and Workers' Parties Conference in Karlovy Vary, Czechoslovakia, in April 1967 (Shaker 1980a). The other Warsaw Pact members seized the opportunity to condemn China and the United States. Their official conference statement also called for, "The conclusion of a non-proliferation treaty as an important step towards the stopping of the arms race."<sup>156</sup> Such a position was at odds with the Romanian efforts in both PCC and ENDC proceedings.

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<sup>155</sup> See: "Minutes of the Romanian Party Politburo Meeting, Report on the PCC Meeting by the General Secretary of the PCR (Nicolae Ceaușescu)," July 12, 1966, PHP, Warsaw Pact Records Collection, [http://www.php.isn.ethz.ch/kms2.isn.ethz.ch/serviceengine/Files/PHP/17947/ipublicationdocument\\_singledocument/245ee2a4-c957-47c2-8d30-04d01c2d06a5/en/660712\\_Minutes\\_Eng.pdf](http://www.php.isn.ethz.ch/kms2.isn.ethz.ch/serviceengine/Files/PHP/17947/ipublicationdocument_singledocument/245ee2a4-c957-47c2-8d30-04d01c2d06a5/en/660712_Minutes_Eng.pdf).

<sup>156</sup> See: "Statement by the European Communist and Workers' Parties on Security in Europe," April 26, 1967, Karlovy Vary, Czechoslovakia,

Beyond reasons of status and protecting Chinese interests, Romania may have opposed the NPT due to its own indigenous proliferation aspirations. This possibility is slightly perplexing, as no major dataset of nuclear proliferation codes Bucharest as exploring or pursuing the bomb during this time (Singh and Way 2004; Jo and Gartzke 2007; Bleek 2017). It is true that no such evidence of military nuclear activities from the 1960s has surfaced. Gheorghe (2013a, p. 1) does note that by 1964 “intelligence analysts in the United States pointed out that Romania had the capacity to go nuclear in a relatively short period of time.” Capacity, however, does not equate to proliferation intent or technical efforts. It is also unclear whether the U.S. assessment was correct given Romania’s lack of ENR capabilities. There is, at best, some evidence that CSEN officials were intrigued by plutonium production plants during a trip to France in March 1965 to discuss technical cooperation on nuclear energy (Gheorghe 2014a, 2014b).

But if Ceaușescu was genuinely interested in nuclear weapons, the common understanding on PNEs reached by the United States and the USSR in September 1966 presented a new barrier (Gheorghe 2013a). The Romanians had sought access to PNEs, purportedly for civil development purposes. Under the agreement between Washington and Moscow, Articles I and II of the NPT prohibit NNWS development or acquisition of devices for PNEs alongside nuclear weapons. Article V allows for the NNWS to benefit from PNEs, but they are

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[https://www.cvce.eu/en/obj/statement\\_by\\_the\\_european\\_communist\\_and\\_workers\\_parties\\_on\\_security\\_in\\_europe\\_karlovy\\_vary\\_26\\_april\\_1967-en-e8fe5ae4-27cc-4e0f-a48a-c8c82cb548e6.html](https://www.cvce.eu/en/obj/statement_by_the_european_communist_and_workers_parties_on_security_in_europe_karlovy_vary_26_april_1967-en-e8fe5ae4-27cc-4e0f-a48a-c8c82cb548e6.html).

services to be provided and performed by the NWS.<sup>157</sup> Tellingly, Ceaușescu would lament that month about Soviet secrecy over missiles and nuclear weapons technology (Gheorghe 2013b).

In March 1967, both Maurer and Ceaușescu indicated to Brezhnev that Romanian opposition to the NPT stemmed from a desire not to tie the state's hands regarding future development of the bomb (Gheorghe 2013a, 2013b). Romania remained in nuclear forbearance, but in line with my theory, taking steps to legally renounce the nuclear option was a more complicated matter. Maurer and Ceaușescu also sought assurances from both the Soviets and the Americans that the NPT would not prevent Romania from obtaining a civilian nuclear energy program (Gheorghe 2013a, Swango 2014).

As the ENDC negotiations headed toward their conclusion, Ceaușescu called for a meeting of the PCC. The Warsaw Pact met in Sofia from March 6–7, 1968, to discuss the many concerns Bucharest had voiced to the NPT in Geneva.<sup>158</sup> In Sofia, Ceaușescu elaborated on the RSR critiques of the treaty.

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<sup>157</sup> See: NPT, Art. I, Art. II, Art. V. The use of PNEs for civil works purposes fell out of favor with scientists and diplomats alike by the 1980s. In 1974, the United States and the Soviet Union would also sign the PNET, which prohibited such activities. While the two sides did not ratify the PNET until 1990—alongside the TTBT—due to verification concerns, its introduction contributed to an emergent norm against PNEs (Herzog, Ko, and Lee 2021).

<sup>158</sup> See: "Letter by the First Secretary of the Polish Workers' Party (Władysław Gomułka) to the General Secretary of the PCR (Nicolae Ceaușescu) on the Romanian Proposal to Summon the PCC," February 13, 1968, PHP, Warsaw Pact Records Collection, [http://www.php.isn.ethz.ch/kms2.isn.ethz.ch/serviceengine/Files/PHP/18008/ipublicationdocument\\_singledocument/655765df-68e9-4df5-bdcf-abb915f2430c/pl/Letter\\_Gomulka\\_Ceausescu\\_1968\\_5.pdf](http://www.php.isn.ethz.ch/kms2.isn.ethz.ch/serviceengine/Files/PHP/18008/ipublicationdocument_singledocument/655765df-68e9-4df5-bdcf-abb915f2430c/pl/Letter_Gomulka_Ceausescu_1968_5.pdf); "Memorandum by the CPSU CC on the Romanian Proposal to Summon the PCC," February 1968, PHP, Warsaw Pact Records Collection, [http://www.php.isn.ethz.ch/kms2.isn.ethz.ch/serviceengine/Files/PHP/18009/ipublicationdocument\\_singledocument/86f3f7e8-2239-4b88-9f6f-9bed7929cc29/pl/Memo\\_CPSU\\_1968\\_4.pdf](http://www.php.isn.ethz.ch/kms2.isn.ethz.ch/serviceengine/Files/PHP/18009/ipublicationdocument_singledocument/86f3f7e8-2239-4b88-9f6f-9bed7929cc29/pl/Memo_CPSU_1968_4.pdf);

For example, he argued that the NWS would need to actually agree to concrete steps toward nuclear disarmament within five years of the NPT entering into force (Timerbaev 1999). The proposal would have significant ramifications for the Soviet nuclear arsenal were it adopted.

The response was harsh, with swift and dismissive criticism from the Bulgarian, Czechoslovak, East German, Hungarian, Polish, and Soviet delegations. Mainly, the other Warsaw Pact states sharply accused Romania of making unreasonable demands and attempting to delay and derail the NPT.<sup>159</sup> The summit produced an odd outcome: a statement in the Soviet newspaper *Pravda* supporting the draft NPT that stressed the “complete unanimity” of the treaty’s other PCC proponents but failed to mention Romania.<sup>160</sup> While the Warsaw Pact seemingly ignored the internal opposition from Romania, Bucharest moved forward by proposing its amendments in the ENDC setting (Hunt 2013).

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“Memorandum by the Hungarian Foreign Minister (János Péter) on the Romanian Proposal to Convene the PCC,” February 5, 1968, PHP, Warsaw Pact Records Collection, [http://www.php.isn.ethz.ch/kms2.isn.ethz.ch/serviceengine/Files/PHP/18010/ipublicationdocument\\_singledocument/dec73e7c-af57-4cfb-9b44-2751a4dc2cc4/en/Memo\\_Peter\\_1968\\_Eng.pdf](http://www.php.isn.ethz.ch/kms2.isn.ethz.ch/serviceengine/Files/PHP/18010/ipublicationdocument_singledocument/dec73e7c-af57-4cfb-9b44-2751a4dc2cc4/en/Memo_Peter_1968_Eng.pdf);  
“Letter by the General Secretary of the PCR (Nicolae Ceaușescu) to the First Secretary of PZPR (Władysław Gomułka) Proposing to Summon the PCC,” January 31, 1968, PHP, Warsaw Pact Records Collection, [http://www.php.isn.ethz.ch/kms2.isn.ethz.ch/serviceengine/Files/PHP/18012/ipublicationdocument\\_singledocument/ff70d906-ed7f-4059-91eb-10cfafc49a9a/en/680131\\_Letter\\_Eng.pdf](http://www.php.isn.ethz.ch/kms2.isn.ethz.ch/serviceengine/Files/PHP/18012/ipublicationdocument_singledocument/ff70d906-ed7f-4059-91eb-10cfafc49a9a/en/680131_Letter_Eng.pdf).

<sup>159</sup> See: “Minutes of the Plenary Session of the Central Committee of the Bulgarian Communist Party - Report on the PCC Meeting by the First Secretary (Todor Zhivkov),” March 14, 1968, [http://www.php.isn.ethz.ch/kms2.isn.ethz.ch/serviceengine/Files/PHP/17966/ipublicationdocument\\_singledocument/92a2385f-449f-4530-938d-322a45d7780f/en/Minutes\\_Bulgarian\\_Plenum\\_1968\\_Eng.pdf](http://www.php.isn.ethz.ch/kms2.isn.ethz.ch/serviceengine/Files/PHP/17966/ipublicationdocument_singledocument/92a2385f-449f-4530-938d-322a45d7780f/en/Minutes_Bulgarian_Plenum_1968_Eng.pdf).

<sup>160</sup> See: “Statement Supporting Soviet Draft Non-Proliferation Treaty,” March 9, 1968, PHP, Warsaw Pact Records Collection, [http://www.php.isn.ethz.ch/kms2.isn.ethz.ch/serviceengine/Files/PHP/17974/ipublicationdocument\\_singledocument/a245770c-3e74-4a9d-a0e2-498077d75df2/en/Statement\\_1968\\_34.pdf](http://www.php.isn.ethz.ch/kms2.isn.ethz.ch/serviceengine/Files/PHP/17974/ipublicationdocument_singledocument/a245770c-3e74-4a9d-a0e2-498077d75df2/en/Statement_1968_34.pdf).

The moves came with substantial diplomatic repercussions for Romania. To this point, the Soviets had tolerated the autonomous Romanian streak. But in Sofia, Brezhnev moved quickly to isolate Romania, noting that its attempt “at sabotaging the conclusion of the treaty [...] could not be allowed.”<sup>161</sup> The Soviets thus put together the joint statement with the intent to show the exclusion of Romania. Brezhnev would further chastise Romania—as would Soviet Foreign Minister Andrei Gromyko—in his speech to the April 1968 Plenum of the Central Committee of the Soviet Communist Party.<sup>162</sup> Brezhnev even went so far as to say:

If the Romanian amendment were accepted, the non-proliferation treaty would not be concluded in the foreseeable future. Who will win from this? First and foremost, the West German revanchists and the neo-Nazis. The nuclear arms race will intensify, and there will be new capitalist states in possession of atomic and hydrogen bombs.<sup>163</sup>

The relative Soviet tolerance of Romanian independence on nonproliferation had come to an end. Brezhnev had already made clear to Ceaușescu that Romanian security and the nuclear umbrella depended upon

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<sup>161</sup> See: “Excerpts from Leonid Ilyich Brezhnev’s speech at the April 1968 Plenum of the Central Committee of the Soviet Communist Party,” April 9, 1968, History and Public Policy Program Digital Archive, Doc. 177818, RGANI: fond 2, opis 3, delo 95, listy 35–44. Trans. Sergey Radchenko.

<sup>162</sup> See: “Excerpts from Leonid Ilyich Brezhnev’s speech at the April 1968 Plenum of the Central Committee of the Soviet Communist Party”; “Excerpts from Andrei A. Gromyko’s speech at the April 1968 Plenum of the Central Committee of the Soviet Communist Party,” April 9, 1968, History and Public Policy Program Digital Archive, Doc. 177819, RGANI: fond 2, opis 3, delo 93, listy 45–47. Trans. Sergey Radchenko.

<sup>163</sup> See: “Excerpts from Leonid Ilyich Brezhnev’s speech at the April 1968 Plenum of the Central Committee of the Soviet Communist Party.”

compliance with the Soviet agenda on the NPT. Now, criticism from all of the state's closest allies threatened to isolate Bucharest, which was economically, politically, and militarily locked into the Eastern Bloc. Diplomats from Warsaw Pact countries also began to strongly object to Romanian proposals at the ENDC, publicly battling their PCR comrades in front of NATO and non-aligned states.

Ceaușescu caved under pressure, signing the NPT on July 1, 1968, the day it opened for signature. In line with U.S. and Chinese assessments of intra-alliance dynamics in the Warsaw Pact, Romania remained squarely in the Eastern Bloc. It is true that Romanian officials believed that the treaty would unfairly freeze the balance of power to the benefit of the NWS over the NNWS.<sup>164</sup> Bucharest had used its relative autonomy to extract concessions from the treaty, but, as my theory would predict, Ceaușescu had little choice except to type signal as a subordinate by quickly signing the NPT when his Soviet patrons insisted. In doing so, he joined every other Warsaw Pact state leader under the Soviet nuclear umbrella.

Crump-Gabreëls (2017, p. 109) contends that “Bucharest radically changed its course in June 1968, when it became clear that an overwhelming majority of UN members supported the treaty.” Yet, such a turn of events entailed Ceaușescu opposing China, constraining Romania's future ability to pursue nuclear weapons, and recanting years of principled opposition to the treaty. Additionally, many other UN members—including Brazil, India, and South Africa—continued to oppose the NPT when it opened for signature. Romania may have wanted to share in the treaty's success, but a more likely pathway to signing

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<sup>164</sup> See: “Memorandum of Conversation,” Washington, DC, April 11, 1968, in *FRUS*, 1964–1968, Vol. XVII, *Eastern Europe*, Doc. 159.

pertains to patron coercion. The aftermath of the Sofia PCC meeting revealed that being an NPT dissenter could cost Romania all of its military allies and its main trading partners. Predictably, such pressure forced the hand of the regime.

Even though type signaling occurred in July 1968, Ceaușescu did not order commitment signaling through his parliament ratifying the NPT until February 1970. This is a relatively short period of time between signature and ratification, although Bulgaria, East Germany, Hungary, and Poland did so in 1969. What might account for the slightly lengthier signature–ratification time-lag in the Romanian case? I find that RSR officials had a protracted ratification discussion related to security threats rather than a pro forma one based on procedural issues.

Gheorghe (2013a) points to Romanian success in opening opportunities for obtaining nuclear energy technologies between 1968–1970 as the determinative factor in the ratification. During these years, Romania had productive conversations about technical collaboration with the Americans, the Soviets, and other European countries. Washington had signed a Nuclear Cooperation Agreement with Bucharest in 1967. And that year, Brezhnev agreed to finally sell Romania the long-desired power plants after receiving assurances that numerous technical obstacles would prevent a drive toward the bomb (Gheorghe 2013a, 2013b, 2018).

However, it remains unclear whether continued progress towards civilian nuclear energy was sufficient to prompt Romania to recant its autonomous streak. Furthermore, the state's first nuclear power reactor only came online decades later in 1996, raising doubts about the overall influence of nuclear energy

on its NPT decision-making. This is not to say that nuclear power was not one incentive for ratifying the NPT, but Bucharest had already been assured by the Soviets in 1967 and the Americans in 1968 that the treaty would not result in civilian energy denial (Gheorghe 2013a, Swango 2014).

Why then did it take longer for Romania to ratify the NPT than it did for the Soviets' other clients? The evidence points to deterioration of Romania's security environment that made commitment signaling about nuclear weapons significantly more costly between 1968–1970. It was not until a serious security threat to Romanian sovereignty was resolved that Bucharest could ratify the treaty. Ceaușescu ordered its ratification only then and when it became clear that both the USSR and the United States would also do so.

In August 1968, the Soviets and all of their Warsaw Pact allies—except Romania—invaded Czechoslovakia to put down reformist ambitions by the new government. The move inspired “true paranoia [...] concerning a possible Soviet invasion” just one month after Ceaușescu had signed the NPT (Deletant and Ionescu 2004, p. 99).<sup>165</sup> Ceaușescu immediately mobilized an armed militia of nearly 100,000 workers to defend the country called the Patriotic Guard (Mason 1982; Deletant 2007). He also condemned the invasion: “There is no justification whatsoever, and there can be no excuse for accepting even for a moment the idea of military intervention in the affairs of a fraternal socialist state (Pechlivanis 2017, p. 242).” The RSR had struggled over adopting the NPT, signaling its intent to eventually legally forswear nuclear weapons because of Soviet pressure and

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<sup>165</sup> See also: “Memorandum of Conversation,” Reykjavík, June 23, 1968, in *FRUS, 1964–1968*, Vol. XV, *Germany and Berlin*, Doc. 278.



protection provided by Warsaw Pact membership. Yet, any role for the Soviet Union as the defender of Romanian sovereignty now appeared to ring hollow.

The threat to Romania from the Kremlin was more than mere paranoia. A heavy Soviet troop presence remained in Czechoslovakia into 1969. U.S. intelligence reports indicate that—at one point—Czech officials cautioned Brezhnev that violence in their country could prompt anti-Soviet resistance in Romania. Brezhnev reportedly replied, “We’ll wipe Romania off the map when it suits us.”<sup>166</sup> Taking the final step to commitment signal to being a NNWS was becoming increasingly difficult, as nuclear weapons would help to secure survival of the Romanian state. Still, Ceaușescu continued to assure U.S. President Richard Nixon, “With regard to physics, we don’t want nuclear weapons, but would wish to use nuclear energy for peaceful purposes.”<sup>167</sup>

The growing pressure on Romania from Soviet military adventurism in the Eastern Bloc prompted a series of diplomatic maneuvers. Ceaușescu, upon the advice of Yugoslav President Josip Broz Tito, aimed to find ways to appease Brezhnev and rebuild relations with Romania’s Soviet patron (Stanciu 2013b). The Romanians also voiced their concerns to the Americans, who demanded Soviet pledges not to invade.<sup>168</sup> In fact, the Nixon administration went so far as to tell

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<sup>166</sup> Qtd. in “Kissinger to the President, ‘Morning Briefing Items,’” February 13, 1969, in NSA EBB 559, “Did Nixon Even Read the CIA’s Daily Briefs?,” Doc. 2A.

<sup>167</sup> “Memorandum of Conversation,” Bucharest, August 2, 1969, in *FRUS, 1969–1976*, Vol. XXIX, *Eastern Europe; Eastern Mediterranean, 1969–1972*, Doc. 183.

<sup>168</sup> See: “Paper Prepared in the Department of State,” Washington, DC, n.d., in *FRUS, 1964–1968*, Vol. XVII, *Eastern Europe*, Doc. 92; “Memorandum of Conversation,” New York, October 7, 1968, in *FRUS*, Vol. XIII, *Western Europe Region*, Doc. 332.

Moscow's envoy in Washington that an invasion of Romania would spell the end of the NPT and other near-term prospects for détente.<sup>169</sup> Mănescu met Brezhnev in Moscow in April 1969 to discuss the overall trajectory of their states' bilateral diplomatic relationship. The meeting ended with the Soviet leader dismissing the prospect of an invasion and noting the importance of Romania within the Eastern Bloc. For their part, the Romanians reaffirmed their allegiance to Moscow. This attempt to patch up fraying relations would lead to preparations for signing a new treaty of friendship by July 1970 (Stanciu 2013b). Perceptions of a pressing Soviet threat and invasion had changed.

Without a Soviet threat to Romanian sovereignty, Ceaușescu could move forward on the NPT. He ordered ratification of the treaty, which the parliament voted for on January 30, 1970. Romania would then deposit its instruments of ratification in Moscow, London, and Washington on February 4. It is essential to note that Bucharest did wait until ratification by the superpowers—on March 5, 1970—was imminent. The delay represented one final act of defiance from a state that had long sought to ensure that the nuclear-armed states would commit themselves to disarmament via the treaty.<sup>170</sup> Ratification simply would not have been possible, however, so long as officials in Bucharest had believed in the constant specter of Soviet invasion. The gap between Romania's type and commitment signaling on the treaty emphasizes the increased level of consideration given to ratification decisions.

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<sup>169</sup> See: "Memorandum of Conversation," Washington, DC, September 17, 1968, in *FRUS*, 1964–1968, Vol. XI, *Arms Control and Disarmament*, Doc. 283.

<sup>170</sup> See: ENDC/199; ENDC/PV.376; DC/230.

The Romanian fear of a Soviet invasion raises a question: If the level of threat to state sovereignty was so high, why did Bucharest not begin to pursue the bomb during this period? There are two likely, related answers. First, nuclearization is a long process that takes many years, and Romania was quite far away from having the capability to rapidly nuclearize. Second, trying to proliferate is not the only tool states use to address emerging threats. During the short period when the Romanians feared a Soviet invasion, Ceaușescu opted for diplomatic solutions. And he was successful in repairing the relationship with the USSR, avoiding a sense of urgency to pursue the nuclear option. With the threat resolved, Romania leaders felt secure in issuing the commitment signal of ratification.

#### The Aftermath, Cheating, and the CTBT

Legally forswearing nuclear weapons through NPT ratification was not the end of the Romanian nuclear story. In line with Sagan's (2011) observation that autocracies are more likely than democracies to cheat by violating their NPT commitments, Ceaușescu would order exploratory nuclear weapons research during the 1980s. However, these activities would never have the resources to allow the serious pursuit of nuclear weapons. The democratic government that emerged after his overthrow, trial, and subsequent execution in 1989 would terminate the program and champion the CTBT as an advocate in the 1990s. The Romanian ratification came three years after signature due to other priorities. But having legally forsworn nuclear weapons through the NPT, the ratification debate in Bucharest was of a pro forma, rather than protracted, nature, with little emphasis on substantive issues.

For Ceaușescu, the 1970s were a period of dissatisfaction with the superpowers' progress toward disarmament per NPT Article VI. He sharply criticized the Interim Agreement of 1972 emerging from the SALT I talks because it did "not take account of third state interests and offered no Soviet or U.S. commitment not to use nuclear weapons."<sup>171</sup> Ceaușescu warned that this attachment to nuclear arms would do little to dissuade proliferation by countries such as India. SALT I not only failed to take disarmament steps desired by Bucharest, but it also contained no negative security assurances for the NNWS.<sup>172</sup> The Romanian President would accordingly continue to push for nuclear abolition throughout the early and mid-1970s, most notably in 1973 and 1975.<sup>173</sup> He consistently informed his interlocutors from Washington and Moscow that their lack of progress toward this end could spur global proliferation cascades.

Alongside 1970s disarmament advocacy, Ceaușescu continued the Romanian drive to develop a civilian nuclear energy program. In 1972, Bucharest would sign an agreement for nuclear safeguards with the IAEA despite objecting to them in principle during the ENDC negotiations.<sup>174</sup> The safeguards agreement

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<sup>171</sup> See: "Memorandum From Helmut Sonnenfeldt of the National Security Council Staff to the President's Assistant for National Security Affairs (Kissinger)," Washington, DC, July 5, 1972, in *FRUS*, 1969–1976, Vol. XXIX, *Eastern Europe; Eastern Mediterranean, 1969–1972*, Doc. 212.

<sup>172</sup> See: "Telegram From Secretary of State Rogers to President Nixon," Belgrade, July 7, 1972, in *FRUS*, 1969–1976, Vol. XXIX, *Eastern Europe; Eastern Mediterranean, 1969–1972*, Doc. 213.

<sup>173</sup> See: "Memorandum of Conversation, Washington, December 4, 1973," Washington, DC, December 4, 1973, in *FRUS*, 1969–1976, Vol. E-15, Part I, *Documents on Eastern Europe, 1973–1976*, Doc. 28; "Memorandum of Conversation, Bucharest, August 2, 1975, 7–8:10 p.m.," Bucharest, August 2, 1975, in Vol. E-15, Part I, Doc. 36; "Memorandum of Conversation, Bucharest, August 3, 1975, 9–10:25 a.m.," Bucharest, August 3, 1975, in Vol. E-15, Part I, Doc. 37.

<sup>174</sup> See: INFCIRC/180.

was instrumental in convincing the Nixon administration to approve the sale of a 14-megawatt TRIGA II (Training, Research, Isotopes, General Atomics) research reactor to Romania. This reactor allowed experimental research into nuclear fuel that might one day be used in a nuclear power program (Gheorghe 2013a). Work also began in 1978 on a nuclear power station at Cernavodă using CANDU (Canada deuterium uranium) reactor technology (Gheorghe 2014a).

There were signs that the Romanians may have been interested in military nuclear applications as well. When India carried out its “Smiling Buddha” PNE in 1974, Ceaușescu quickly sent a delegation of scientists for an exchange of expertise with New Delhi (Gheorghe 2014a). Ceaușescu also told officials from Atomic Energy Canada in 1976 that he intended for Romania to have an autonomous nuclear weapon program by 2000. Still, the Canadians nevertheless agreed to sell him CANDU reactors. Romania had become adept at playing nuclear suppliers off one another and had numerous supply-side options (Gheorghe 2019). In 1976, U.S. intelligence concluded that “if Romania were to opt to produce nuclear weapons, it can acquire the necessary knowhow and material over a reasonably short span of years (Gheorghe 2013a, p. 15).”

Such activities and statements by Ceaușescu did, however, lead to some complications in the nuclear marketplace. Romania came under pressure during the presidency of U.S. President Jimmy Carter, who had a more intense focus on nonproliferation than his predecessors. The Carter administration’s emphasis on the 1978 NNPA and Nuclear Suppliers Group (NSG) Guidelines created bottlenecks in the supply chain. Romania gave up on purchasing hot cells

from the United States and instead bought them from France's Ateliers et Chantiers de Bretagne (Gheorghe 2019). The French—non-signatories to the NPT—had far less intrusive safeguards demands than the Americans. Of course, procuring hot cells for nuclear materials research by itself does not imply nuclearization intentions. Hot cells may also be used in the production of medical radioisotopes or for examining how fuel has held up in a reactor, which can be important for developing independent fuel fabrication capabilities. Romania's research, however, does not appear to have been for either of these purposes.

In 1983, Ceaușescu ordered his scientists at the Nuclear Technologies Institute in Pitești to engage in experimental research to extract plutonium from irradiated nuclear fuel (Gheorghe 2019). They succeeded by 1985 in reprocessing “a small quantity” of fissile isotope Plutonium-239 (Pu-239), which may be used as material for a bomb (Gheorghe 2013a, p. 4). The manner of the experiments was similarly suspect, as they were not declared to the IAEA and intentionally scheduled around safeguards inspections to avoid detection (Dunn 2009; Gheorghe 2014a; Findlay 2015). Gheorghe (2013a, 2014a) further points to an interest in HWRs that would produce plutonium byproducts with natural uranium fuel to indicate nuclearization intent. Yet, the experiments involved reprocessing only 100 milligrams of plutonium, a far cry from the kilogram quantities required to build a bomb (Findlay 2015, p. 37).

Bleek (2017, p. 43) argues convincingly that such evidence hardly constitutes “pursuit” of nuclear weapons. The plutonium separation experiments were only small-scale laboratory exercises. HWRs and reprocessing were also

attractive because they would make dependence on foreign-supplied enriched nuclear fuel unnecessary. Still, given the nature of these activities, three political science studies code Romania as “exploring” the nuclear option. Since only limited material has been published on these experiments, dates for nuclear exploration are varied. Bleek (2017) codes it as taking place from 1979–1989, longer than Jo and Gartzke (2007) who say 1981–1989, and Singh and Way’s (2004) coding of 1985–1989. In all cases, there is agreement that the activities ceased in 1989. That year, Ceaușescu was overthrown in a revolution that gave rise to a new democratic government under Ion Iliescu.

The fact of Romanian violation of the NPT is not in itself surprising. As the theory explains, cheating may occur in multilateral nuclear arms control regimes, consistent with Sagan’s (2010) observation that autocracies are more likely to cheat than democracies. This does not mean that the NPT is ineffective. The statistical literature shows that the treaty has a causal effect in preventing proliferation (Fuhrmann and Lupu 2016). A total of 24 of 58 economically-capable states engaged in nuclear weapons activities prior to the NPT opening for signature, but only 13 of 83 did so after its introduction (Müller and Schmidt 2010).

Instead, the theory predicts that treaty withdrawal is highly unlikely. Chapter 2 of this dissertation explained how withdrawing from nuclear treaties invites severe punishment from the international community by signaling that a state may seek the bomb. In line with the theory, Ceaușescu did not attempt to withdraw. It is also telling that Romanian officials planned the plutonium separation experiments to avoid apprehension by the IAEA and the wider international

community. The consequences of being caught in non-compliance with its NPT obligations could have been severe, including economic sanctions and possible—but unlikely, given the extremely limited scale of violations—Soviet military intervention. Even if non-compliance did not rise to the level of intervention from Moscow, previous Warsaw Pact unanimity on the NPT indicates that disclosed violations would have at least resulted in increased Romanian isolation from its communist allies.

Ceaușescu's brief flirtation with nuclear proliferation during the 1980s remains surprising, nonetheless, given the alliance with Moscow and general lack of tensions with NATO. As Debs and Monteiro (2017, p. 76) argue, "We know of no security motivation behind Romania's nuclear exploration." Alternative possibilities for Romanian hedging behavior are more likely. They include domestic pressure from scientists eager to experiment with new technologies (Sagan 1996/1997) and international status incentives (Hymans 2005). Though this dissertation does not seek to definitively explain proliferation decision-making, some combination of the two seems most plausible. Romania had, after all, engaged in a broad technology procurement program, and its leaders had doubts about the treaty's viability to prevent horizontal proliferation and the emergence of new nuclear powers. Low-level nuclear exploration would help to move Romania closer to the bomb should it ever become necessary.<sup>175</sup> This

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<sup>175</sup> These activities also occurred during the U.S.–Soviet INF crisis, which jeopardized Romanian security. In the fall of 1983, Ceaușescu sent a letter to U.S. President Ronald Reagan declaring neutrality in a manner reminiscent of Gheorghiu-Dej's communication with Kennedy during the Cuban Missile Crisis (Watts 2013). See also: "Telex from the East German Embassy in Romania to Bucharest, 14 October 1983," History and Public Policy Program Digital Archive, Doc. 116690, Federal Archives of Germany, Military Branch (BA-MA), Freiburg i. Br., DVW 1/71040. Trans. Larry



should not be confused with a proximate security threat motivation, as it more closely resembles Narang's (2016/2017, p. 118) concept of insurance hedging "to further reduce the time required to build a bomb should a state need to weaponize."

Narang (2016/2017, p. 118) notes that insurance hedging does not involve "developing organizational routines for the management of nuclear weapons or any physical work on weaponization." In all likelihood, the Romanian experiments involved laboratory proof-of-concept reprocessing, very far from anything resembling a concerted drive for the bomb. There is also no evidence that Romania amassed the necessary combination of nuclear capability indicators for weaponization identified by Meyer (1984) and Stoll (1996). These human capital resources include: metallurgists, chemical engineers, nuclear engineers/physicists/chemists, electronic/explosive specialists, nitric acid production capacity, and electricity production capability. Furthermore, Ceaușescu's 1976 statement that Romania would have its own nuclear weapon by the year 2000 attests to the lack of organized effort and resources associated with the Romanian military nuclear option.

The 2000 plan never materialized, and Ceaușescu was overthrown and executed in 1989. The democratic Iliescu government was more supportive of multilateral nuclear agreements than its predecessor. It pursued a pro-western course of policy as it attempted to move toward NATO membership—achieved in 2004. Iliescu embraced the NPT, as Romania invited the IAEA into the country for

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L. Watts. No evidence has surfaced suggesting that the Euromissile crisis spurred the RSR to consider nuclear experimentation for hedging purposes in the 1980s, though the possibility cannot be excluded.

special inspections in 1992 to investigate the plutonium separation legacy (Dunn 2009). His government would also support the indefinite extension of the NPT in 1995 and the negotiation of the CTBT in Geneva as a member of the CD.

Had the communist government remained in power during the test ban negotiations, there might have been cause for concern among CTBT proponents. Romania tried to establish technical exchanges with China and India following their first nuclear tests in 1964 and 1974, respectively. The RSR had also been interested in PNEs during the 1960s and 1970s, leveraging IAEA technical cooperation to connect with subject matter experts on the topic. Romania made contact with PNE specialists from France, India, the United States, and the USSR (Gheorghe 2013a). But as the credibility of PNEs for civil-scientific projects waned in the international community in the 1980s, so too did Romanian interest.

Still, even Gheorghiu-Dej and Ceaușescu would likely have supported the CTBT. Gheorghiu-Dej advocated for the Stoica Plan's Balkan NWFZ in 1958, when Khrushchev "began calling for disarmament and a nuclear test ban (Mavrodin 2020, p. 198)." In July of that year, the Romanian leader sent seismoacoustic experts to a joint NATO–Warsaw Pact meeting in Geneva to design a test ban verification regime (Johnson 2009).<sup>176</sup> The LTBT of 1963 did not incorporate their proposed monitoring system of 160–170 stations due to perceived difficulties in monitoring underground nuclear explosions.<sup>177</sup> It did,

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<sup>176</sup> Romania had considerable expertise in seismic monitoring due to its earthquake-prone Vrancea region. Seismology is fundamentally a dual-purpose science with both civil-scientific and nuclear explosion monitoring applications.

<sup>177</sup> In 1959, the U.S. Berkner Panel of technical experts "concluded that the Geneva system of about 160 monitoring stations would not be able to identify explosions below about 20 kt with a

however, help to form the basis of the eventual IMS of the CTBT (Ramaker et al. 2003). The RSR had followed the lead of its Soviet patron and adopted the LTBT irrespective of verification concerns. Gheorghiu-Dej signed on August 8, 1963, and ratification came shortly thereafter on December 12, 1963. Under Ceaușescu, Romania would join with seven other communist countries, including the Soviet Union, to propose a verifiable CTBT in 1987.<sup>178</sup> Their joint CD working paper also suggested possible OSI as part of the test ban regime.

Support for the idea of a CTBT in principle was one of the few nuclear legacies of the Ceaușescu regime followed by Iliescu. This strategy was logical, as Romania had already legally forsworn nuclear weapons through the NPT and given up on the hopes of conducting PNEs. Bucharest had little to gain by holding out on the test ban and faced no serious security threats, so my theory predicts an advocate's type signal followed by ratification. Romania was one of 61 states to participate in the treaty negotiations at the CD in Geneva from 1993–1996 (Mackby 2016). Its officials, led by Ambassador Romulus Neagu, were early supporters of the treaty.<sup>179</sup>

In Geneva, Romanian negotiators frequently agreed with the positions of the United States and other NATO countries. Their intent appears to have been creating a verifiable CTBT that would ensure fairness for the NNWS

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high degree of probability (Ramaker et al. 2003, p. 5).” However, seismologists Richards and Zavales (1996) have since determined that such analysis was overly conservative and may have prevented the realization of an early, viable nuclear detection system.

<sup>178</sup> See: CD/756.

<sup>179</sup> See, e.g.: CD/PV.669.

and make impossible evasive nuclear testing. Bucharest joined with Washington and several of its allies to propose an IMS with global coverage enabling detection of nuclear tests at yields of one kiloton or lower (Ramaker et al. 2003). The proposal was eventually adopted and offered the lowest detection threshold of the various options considered. The delegations had agreed that a 0.1 kiloton threshold or dedicated CTBT satellite monitoring network would be prohibitively expensive. Such options were not viewed as necessary for the detection of militarily significant evasive testing. Romania also supported some of the most intrusive OSI provisions, which were at times concerning to Moscow. They included the use of “data from national technical means [...] collected in conformity with international law (Ramaker et al. 2003, p. 159).” Today, the authentication of such data and intelligence remains an area of debate in the CTBTO’s Working Group B on verification issues.

Additionally, Ambassador Neagu and the Romanian delegation in Geneva stood with the United States on the matter of computer simulations and laboratory experiments.<sup>180</sup> The nuclear-armed countries battled against states like Brazil that sought to prohibit most scientific activities intended to replicate nuclear tests without producing a nuclear explosive yield. Neagu criticized this type of language as unverifiable and a risk to derail the negotiations. He was probably right, as the nuclear-armed states were highly unlikely to accept such provisions.

Romania also advocated for three general treaty principles to prevent any state from impeding the enforcement of the CTBT. First, it was the

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<sup>180</sup> See: CD/PV.706.

Romanian hope that the CTBTO's Executive Council—which would receive data from OSI—would report treaty violations to the UNGA instead of the UNSC. This was proposed to subvert the veto power of Russia and the other permanent members of the Security Council, but it was unsuccessful.<sup>181</sup> Second, Romania opposed the idea of having treaty review conferences to amend CTBT provisions “unless new scientific and technological developments provided a reason to do so (Ramaker et al. 2003, p. 212).”<sup>182</sup> The majority of states rejected the Romanian proposal, and CTBT Article VIII thus calls for the convening of review conferences every ten years after entry-into-force.<sup>183</sup> Third, Romania stood with the United States in objecting to an Indian proposal to link the treaty to specific time-sensitive disarmament commitments (Ramaker et al. 2003).<sup>184</sup> The exclusion of such provisions from the agreement resulted in India remaining outside the treaty. At the same time, the United States could continue to provide the nuclear umbrella that would eventually protect Romania.

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<sup>181</sup> Here, it is important to recall that the veto-wielding P5 are nuclear-armed and are thus among the most-likely candidates to violate the CTBT by conducting nuclear test explosions.

<sup>182</sup> For example, treaty Article IV (Part B) explains that the IMS shall consist of internationally-certified seismic, infrasound, hydroacoustic, radionuclide, and noble gas stations as well as radionuclide processing laboratories. Yet, Article IV (para. 11) calls for “the examination of the verification potential of additional monitoring technologies such as electromagnetic pulse monitoring or satellite monitoring, with a view to developing, when appropriate, specific measures to enhance the efficient and cost-effective verification of this Treaty.” It is these types of breakthroughs that might have been worthy of convening a review conference from the Romanian viewpoint.

<sup>183</sup> See: CTBT, Art. VIII, para. 2.

<sup>184</sup> See also: CD/PV.696.

Lastly, Romania sought the early entry-into-force of the CTBT. It initially objected to stringent treaty language to this end, proposing that 40–50 states, including the five NPT-designated NWS, would be sufficient (Ramaker et al. 2003). However, numerous states viewed this provision as overly permissive. It did not account for India, Israel, North Korea, Pakistan, or advanced civilian nuclear powers with short breakout timelines to the bomb. Instead, the CD agreed to the CTBT Annex 2 language requiring the 44 “nuclear-capable states” with nuclear weapons programs, civilian nuclear power plants, and research reactors to ratify the treaty before entry-into-force.<sup>185</sup> This language, which included Romania among the Annex 2 states, has proven problematic as far as CTBT entry-into-force. Twenty-five years after the negotiations concluded, eight states must still ratify the treaty before it can take effect.

Despite having some remaining concerns about parts of the eventual treaty, Bucharest opted to support the CTBT. Romania joined several other non-nuclear members of the CD in supporting the submission of the draft treaty of June 28, 1996, to the UNGA. After additional amendments to satisfy China on OSI and efforts to bypass Indian objections on nuclear disarmament, the General Assembly received the CTBT for its consideration. The body widely approved the final text on September 9, 1996 (Johnson 2009).

The Romanian government acted quickly to join the test ban regime. Iliescu signed the treaty on September 24, 1996, the day it opened for signature. In doing so, Romania type signaled as an advocate of the treaty. Romania’s

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<sup>185</sup> See: CTBT, Annex 2.

commitment to being a NNWS was no longer contested as it was during the Ceaușescu years. The voluntary IAEA inspections of 1992 and quick signing of the CTBT helped put the contentious PCR nuclear legacy to rest. There was little for Bucharest to lose in accepting a distribution of power that limited the vertical and horizontal proliferation of capabilities Romania had forsworn. Iliescu's successor, Emil Constantinescu, had the parliament pursue ratification. On October 5, 1999, the representatives did so after a pro forma debate—there were no strong substantive objections to the treaty.

The three-year time-lag between type and commitment signaling may be attributed to policy priorities. Constantinescu (2005) details in his autobiography how his presidency dealt with pressing issues ranging from economic liberalization, to preparing for NATO and European Union candidacy, to constitutional crises provoked by his firing of prime ministers. CTBT ratification was important, but it was hardly among the top parliamentary priorities of the time. Having given up any nuclear weapon aspirations, there were few external pressures on Romania to hastily ratify the treaty. Its commitment signal was expected. Romania would soon install and receive CTBTO certification of its IMS seismic station at Muntele Rosu, as stipulated in Annex 1 to the treaty's protocol.<sup>186</sup> The country has since been an active participant in discussions of treaty monitoring and verification prior to the CTBT's entry-into-force.

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<sup>186</sup> See: CTBT, Protocol, Annex 1; CTBTO, "CTBTO World Map," updated as of March 9, 2021, <https://www.ctbto.org/map/>.

## Conclusion

The prevailing narrative in the literature surrounding Romanian behavior on multilateral nuclear arms control is that of the maverick. Such characterizations seem to make sense at first glance. After all, Bucharest behaved independently from the Warsaw Pact at the ENDC negotiations on the NPT and frequently challenged the Soviets in internal PCC nuclear deliberations during the 1960s. The RSR also had a wide-ranging nuclear procurement program in the 1960s and 1970s, striking technology transfer deals with communist and non-communist states alike. Then, Ceaușescu briefly ordered exploratory nuclear activities in the 1980s. The literature's explanations for why Romania overcame its longstanding resistance to the NPT fall short, however. Obtaining a civilian nuclear program and wanting to take partial credit for the treaty's successful negotiation are unlikely drivers. The first power plant did not come online until 1996, and the PCR had fought hard to sabotage the NPT.

A careful reading of the transcripts of the ENDC negotiation records seems to deceptively support the maverick characterization. The records show Romania as a status dissenter: opposing the Soviet Union and its Warsaw Pact allies by chastising the NPT as discriminatory and codifying an unacceptable balance of power. Bucharest appeared to agree with non-aligned state critics of the accord more than it did with its closest allies. Yet, the fact that Romania signed and ratified the NPT on a similar timeline to the other Soviet client states suggests that there is more than meets the eye in this case. For all its criticism of the treaty, Romania legally forswore nuclear weapons in an expeditious manner.



In actuality, Bucharest neatly fits into the template of my process-based theory of entry into multilateral nuclear arms control treaties. Gheorghiu-Dej, Ceaușescu, and other Romanian officials surely cared about peaceful civilian nuclear energy and pursuing an autonomous foreign policy. Their position at the ENDC made clear that Bucharest had every incentive to join states like Brazil and India—that offered similar objections—in resisting the NPT after its opening for signature. However, this chapter’s examination of historical accounts, meeting records, and diplomatic correspondence reveals that Romania was a subordinate in the NPT context. The Kremlin allowed limited autonomy from Bucharest on agricultural trade issues, but refusing to join the NPT was a bridge too far. The Soviets and their Warsaw Pact allies made it plain to Ceaușescu and his advisors that being a status dissenter would result in isolation and abandonment.

The evidence indicates that pressure from the Warsaw Pact, particularly the Soviet Union, compelled Ceaușescu to sign the treaty. Bucharest could not risk the consequent diplomatic and economic punishment promised by Brezhnev. Romania type signaled its subordinate state allegiance to Moscow in 1968, but the deteriorating relationship with the Soviets briefly delayed its more intense commitment signaling. Ratification became possible only in 1970 once Brezhnev had provided assurances that the USSR presented no threat to Romanian sovereignty and would likewise ratify the treaty. The CTBT was significantly less complicated for Romania as the post-Cold War democratic government harbored no secret nuclear proliferation or hedging aspirations. Iliescu endorsed the balance of power enshrined by the CTBT and signed the test ban in

1996 as an advocate. Ratification followed in 1999 under Constantinescu after a pro forma debate containing little substantive content.

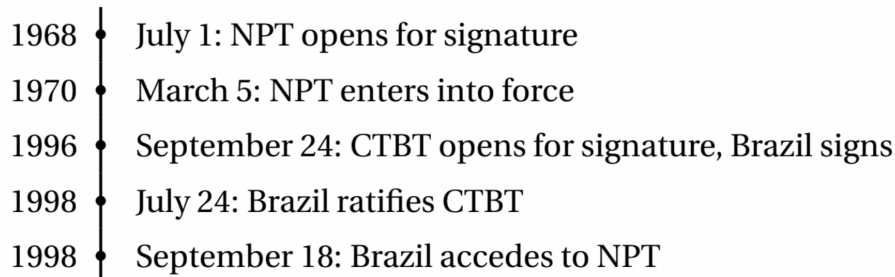
## **Chapter 5 – Brazil: Status Aspiration Barriers to Arms Control**

From start to finish, Brazil was one of the principal antagonists of the NPT during the treaty negotiations of 1965–1968. The Brazilians castigated the agreement as a tool of the nuclear-armed states to freeze world power and deny advanced technology to developing states. It was thus anything but surprising when military dictator Artur da Costa e Silva refused to sign the accord in 1968. While U.S. leaders hoped Brasília would reverse its decision, every move Washington made to limit the state's access to civilian nuclear capabilities only hardened its drive to obtain them. This course continued unabated under each successive Brazilian administration—whether autocratic or democratic—until 1998, when Brazil acceded to the NPT under popular President Fernando Henrique Cardoso. Until that point, Brazil had epitomized a status dissenter to multilateral nuclear arms control per the typology shown in Table 3 of Chapter 2. Such states decline to sign treaties they believe reify a balance of power that limits their international status.

The interaction of Brazil's status aspirations and U.S. nonproliferation pressure is a fascinating story of more than three decades of defiance to the superpower-led nuclear order (see Figure 6 for a timeline). It involves secret deals with former Nazi nuclear scientists, regional competition with Argentina, and confrontation between military and civilian leaders over clandestine activities and an alleged nuclear test site. One of the most important questions regarding the contentious history of Brazilian nuclear politics remains underexplored in the scholarly literature. This chapter seeks to answer that question: Why did Brazil finally accept multilateral nuclear arms control after so

many years of refusing to accept a treaty its leaders viewed as unequal and harmful to its international status?

**Figure 6:** Timeline of Brazilian NPT and CTBT Diplomacy



1968	July 1: NPT opens for signature
1970	March 5: NPT enters into force
1996	September 24: CTBT opens for signature, Brazil signs
1998	July 24: Brazil ratifies CTBT
1998	September 18: Brazil accedes to NPT

Existing literature generally provides three potential explanations for the decision to legally forswear nuclear weapons via the NPT during the Cardoso era. First, Brazilian mastery of uranium enrichment enabled the accession (Patti 2012; Debs and Monteiro 2017). Second, democratization was the key factor leading to the embrace of the treaty (Graham 2002; Goldemberg, Alvim, and Mafra 2018). Third, non-nuclear norms associated with the NPT were pivotal in prompting the diplomatic reversal (Ruble 2010).

This chapter brings new analysis of historical documents and original interviews of key actors—including President Cardoso—to bear on the debate. My extensive research based on fieldwork interviews and archival documents challenges these existing explanations by providing new evidence on Brazil's nuclear decision-making and research programs. I find that, with some adaptation, the first and third explanations above are more persuasive than the second. However, neither fuel cycle mastery nor norms were independently sufficient to trigger NPT accession. Looking at treaty accession through the lens of my process-based theory highlights the underlying signaling context. I argue that Brazilian

participation in the NPT required a joint signal based on both status (type signal) and security (commitment signal) considerations. I show that the evolving nature and universalization of the treaty grew to pose status liabilities for advanced nuclear holdout states like Brazil. Additionally, the evidence demonstrates that Brazil faced no serious security threats and stood to gain from nuclear hedging as a member of the NPT. It took 30 years after the treaty opened for signature for an environment conducive to joint signaling to emerge. But emerge it did, and Brazil joined the NPT on September 18, 1998.

The chapter proceeds in five sections as it dissects Brazil's complicated history with nuclear power and nuclear weapons. First, I chronicle the beginnings of Brazilian interest in the atom and the start of the national nuclear program. Second, I examine the sources of Brazilian type signaling of dissatisfaction with the NPT during the ENDC negotiations on the treaty. Third, I analyze the nuclear history of Brazil's dictatorship after it refused to sign the NPT, including nuclear procurement efforts, struggles against U.S. nonproliferation pressure, and the "parallel program" of nuclear development under military auspices. Fourth, I focus on domestic and international changes after the transition to democracy that eventually led Brazil to accept the NPT, the CTBT, and other multilateral security institutions. Finally, I summarize the evidence and conclude the chapter.

### Early Atomic History and Development Goals

The nuclear politics of Brazil were about international status aspirations from the very beginning. Brazilian interest in the atom began soon after the end of the

Second World War. In January 1946, the UNGA established the United Nations Atomic Energy Agency Commission (UNAEC) to oversee nuclear matters. Brazil appointed Admiral Álvaro Alberto—now known as the father of the Brazilian nuclear program—as its representative to the UNAEC (Patti 2012). Alberto took a keen interest in nuclear energy, and in April 1946, proposed widespread international cooperation and domestic development of civilian atomic power to the Brazilian National Security Council (CSN). To Alberto, nuclear power offered Brazil a path to rapid development alongside membership in an exclusive club of technologically advanced states. The administration of President Gaspar Eurico Dutra marked the issue as a policy priority for a future National Research Council. Alberto did not at that point obtain the infrastructure support he sought for the initiative (Patti 2015).

Despite only limited support from the Dutra administration, the UNAEC role presented Alberto with opportunities to shape Brazilian nuclear policy. The United States proposed the Baruch Plan in New York to the UNAEC during the summer of 1946. It called for an International Atomic Development Authority to control nuclear technology and the atom. Bernard Baruch, the U.S. representative to the UNAEC, initially reported to President Harry Truman that Brazil supported the plan.<sup>187</sup> But as the negotiations on nuclear controls dragged on, Alberto and his team argued that “no restrictions shall be imposed on the nations that hold raw

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<sup>187</sup> See: “Memorandum by The United States Representative on the Atomic Energy Commission (Baruch) to President Truman,” New York, September 17, 1946, in *FRUS*, 1946, Vol. I, *General; The United Nations*, Doc. 482.

materials relative to the use of material for pacific ends.”<sup>188</sup> Washington objected to the Brazilian proposal as a loophole that might allow for the proliferation of nuclear weapons by the Soviets and others.<sup>189</sup>

Alberto’s position was foundational, however, as it foreshadowed the status-driven nature of the next several decades of Brazilian nuclear history. The admiral would win approval from Dutra in November 1947 to reject the Baruch Plan as an infringement on national sovereignty (Patti 2012). Because the plan was also unclear on whether the United States would give up its nuclear monopoly, opposition from Moscow would eventually prevent its realization.

At home, Alberto continued to seek support for nuclear energy. He led a group of scientists who introduced a bill in April 1949 to establish the National Research Council previously supported by Dutra. In January 1951, the bill passed. Alberto became the head of the new National Council for Scientific and Technological Development (CNPq), which included a Nuclear Energy Commission (Patti 2015; Goldemberg, Alvim, and Mafra 2018). Alberto then spearheaded efforts to develop human capital and raw inputs for the nuclear energy project. He quickly established nuclear physics programs at universities with the help of foreign scientists and sent Brazilian students to study at top universities abroad. Meanwhile, the government stood up “public companies for mining Brazilian uranium reserves while banning foreign exploitation (Spektor

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<sup>188</sup> See: “The Acting Secretary of State to the Embassy in Brazil,” Washington, DC, September 4, 1947, in *FRUS*, 1947, Vol. I, *General*; *The United Nations*, Doc. 344.

<sup>189</sup> The Soviets would go on to conduct their first nuclear explosive test in 1949 and would build an arsenal rivaling the United States during the Cold War.

2016, p. 637).” Still, CNPq was not an organized and well-funded nuclear development effort like the U.S. Atomic Energy Commission (AEC).

But Alberto made the most of his limited resources, also beginning nuclear technology procurement efforts through the CNPq. While Alberto was unsuccessful in a 1951 attempt to purchase a cyclotron from the United States for use in nuclear medicine, leadership changes provided him with a new base of support.<sup>190</sup> Getúlio Vargas had succeeded Dutra as president on an ambitious center-left platform of national development and protectionism that matched Alberto’s plans to enhance Brazilian status (Levine 1998). In October 1952, Vargas signed off on a classified CNPq plan to aggressively seek foreign nuclear technologies to pursue higher levels of domestic development (Patti 2012).

Alberto acted on the president’s approval, first attempting to obtain a Norwegian HWR. Because HWRs operate on natural uranium fuel, the reactor would have prevented dependency on foreign fuel suppliers. For Brazil, the perception of independent technical capabilities was central to enhanced global status. Alberto changed his mind due to costs, however, turning to West German technologies in 1953 on the advice of prominent nuclear scientists: American Robert Oppenheimer and West German Paul Harteck (Patti 2015). The FRG

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<sup>190</sup> The Harry Truman administration opted not to sell Brazil the cyclotron particle accelerator out of distrust that it would not be used for exclusively peaceful civilian projects. This occurred even as the State Department assessed that denying the sale would make Brazil considerably less willing to provide raw materials for use in the U.S. nuclear program. [See: “The Acting Secretary of State to the Embassy in Brazil,” Washington, DC, December 6, 1951, in *FRUS*, 1951, Vol. I, *National Security Affairs; Foreign Economic Policy* Doc. 273; “The Ambassador in Brazil (Johnson) to the Special Assistant to the Secretary of State (Arneson),” Rio de Janeiro, December 11, 1951, in *FRUS*, Vol. I, Doc. 274; “The Ambassador in Brazil (Johnson) to the Secretary of State,” Rio de Janeiro, December 11, 1951, in *FRUS*, Vol. I, Doc. 275].



technologies would involve uranium enrichment that could be used as part of reactor fuel fabrication for LWRs. While this option would also prevent dependence, it posed a dual-use risk for nuclear weapons proliferation by accumulating highly-enriched uranium (HEU).<sup>191</sup> Likewise, HWRs would have created significant plutonium byproducts that could be separated through reprocessing, again raising the inevitable dual-use dilemma. There is no evidence, however, that the overarching objective of these Brazilian nuclear procurement efforts was to produce a bomb. Instead, Alberto's longstanding goal of using nuclear energy to increase Brazilian status and development had strong support from Getúlio Vargas and his administration.

Alberto had contracted Harteck, who had played a role in the failed Nazi attempt to build the bomb, to forge ties between Brazilian and FRG scientists (Patti 2015). The admiral traveled to West Germany in 1953 and met with Harteck and his collaborators Konrad Beyerle, Wilhelm Groth, and Otto Hahn. These former Nazi scientists agreed to produce three prototype gas centrifuges and train Brazilian counterparts in uranium enrichment techniques (Gall 1976). The U.S. Embassy in Rio de Janeiro warned the CSN that this "German adventure in Brazil [...] could be considered as a potential threat to the security of the United States and the Western Hemisphere" (Gall 1976, p. 44). Further, the U.S. government

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<sup>191</sup> Uranium in nature is approximately 99.3 percent non-fissile isotope Uranium-238 (U-238) and 0.7 percent fissile isotope Uranium-235 (U-235), which can sustain an atomic chain reaction. Low-enriched uranium (LEU) with 3–5 percent U-235 content can fuel a nuclear reactor. Uranium becomes HEU at a level of 20-percent enrichment or greater. Irradiated HEU targets are typically used in medical isotope production, but HEU becomes "weapons-grade" at a 90-percent enrichment level and is usable in an atomic bomb. Having gas centrifuge technologies, or ENR in general, does not mean that a state is interested in nuclearization given the many civilian applications. Still, the dual-use dilemma may loom in the minds of a state's interlocutors.

informed Alberto that—irrespective of the stated intent to create enriched nuclear fuel for reactors—the export could not be approved by the AEC. The FRG was, after all, barred from this type of atomic research per the conditions of the Allied post-war occupation (Patti 2015). When the centrifuges were completed, the British military blocked their shipment from the Port of Hamburg (Sá 2015).

The centrifuges were released to Brazil in 1956, as they turned out to be useless for uranium enrichment (Dalaqua 2019). One Brazilian physicist even referred to them as “expensive chocolate makers (qtd. in Sá 2015, p. 5).” The centrifuges were an embarrassment and placed in storage for years to come at São Paulo State’s Institute for Technological Research (Goldemberg, Alvim, and Mafra 2018). Yet, the episode only increased the Brazilian drive to obtain nuclear energy and civilian nuclear power status through whatever means necessary.

As the centrifuge story was unfolding, domestic political scandals rocked Brazil and led to the suicide of Getúlio Vargas in August 1954. His more pro-American successor, João Café Filho, was decidedly less enthusiastic about Alberto’s quest for an autonomous nuclear program and protection of Brazilian uranium reserves. Café Filho quickly signed a Wheat Agreement with Washington in 1954 that provided uranium exports in exchange for wheat, not conditional upon any technology transfer (Pecequillo and Bertolucci 2019). And in 1955, he walked back cooperation with the FRG and signed an agreement under the Atoms for Peace Program after being pressured by the administration of Dwight D. Eisenhower (Debs and Monteiro 2017). The Americans had recognized and leveraged Brazil’s inability to produce its own nuclear technology while eyeing its

vast and unexplored uranium and thorium reserves (Kassenova 2016). The deal contained both fuel supply guarantees and safeguards provisions regarding the transfer of reactors and materials.<sup>192</sup> Yet, total reliance on the United States in the nuclear domain was objectionable to proponents of enhanced Brazilian status.

The deal produced mixed reactions. In the National Congress, an inquiry found that it created unnecessarily high Brazilian dependence on the United States for its nuclear needs (Debs and Monteiro 2017).<sup>193</sup> Among some members of the public, the reaction was quite the opposite. The Atoms for Peace program provided a glimpse into ideas of modernity and being a great power. More than 500,000 people visited an exhibit set up by the U.S. government in São Paulo to highlight the benefits of nuclear energy. The U.S. National Security Council (NSC) assessed it as the “most inspirational expression of U.S. leadership that has been formulated in many years.”<sup>194</sup> Status was the key consideration for both reactions.

However, the fears of the congressional inquiry prevailed as Washington began restricting exports to Brazil and limiting the scope of technical exchanges. In an interview, former nuclear official Ambassador Marcos Azambuja described Atoms for Peace as creating a status deficit among Brazilian leaders by

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<sup>192</sup> See: “Telegrama Para a Embaixada em Washington em 15/VII/65/Confidencial– Urgente 618/2,” July 16, 1965, Secretaria de Estado das Relações Exteriores, Fundação Getúlio Vargas [Getulio Vargas Foundation] (FGV), Centro de Pesquisa e Documentação de História Contemporânea do Brasil [Center for Research and Documentation of Contemporary History of Brazil] (CPDOC), Rio de Janeiro, Doc. 12429, internal digital holding.

<sup>193</sup> Flesher (2006) describes how the series of agreements produced during this time included restrictive U.S. language designed to limit technology and knowledge transfers to Brazil.

<sup>194</sup> See: “Report Prepared by the National Security Council,” Washington, DC, August 31, 1955, in *FRUS*, 1955–1957, Vol. IX, *Foreign Economic Policy; Foreign Information Program*, Doc. 190.

almost immediately failing to offer nuclear energy on equitable terms.<sup>195</sup> Or, as Ambassador Sérgio Duarte—perhaps Brazil’s most noted arms control expert—recounts: “This was a freezing of the world power, and Atoms for Peace did not make technology available for peace on our terms.”<sup>196</sup>

The next elected president, Juscelino Kubitschek, returned the country to an ambitious nationalist development agenda.<sup>197</sup> For Kubitschek and his advisors, relying on the United States alone for nuclear development was inadequate, even as Brazil received Latin America’s first research reactor under Atoms for Peace in 1956 (Goldemberg, Alvim, and Mafra 2018). This “swimming pool” reactor (IEA-R-1) came online in 1957 at the University of São Paulo Nuclear and Energy Research Institute (IPEN). Alongside this gain in nuclear research capacity, Kubitschek revitalized several of Alberto’s initiatives, including the funding of nuclear cooperation with France and West Germany. The president “considered nuclear energy to be a main priority of his ambitious economic-development plan, the so-called *Plano das Metas*, which sought to industrialise Brazil in a short period (Patti 2015, p. 370).” Along these lines, he ordered the creation of the National Nuclear Energy Commission (CNEN) in October 1956 to finally coordinate broad nuclear energy development efforts.<sup>198</sup>

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<sup>195</sup> Author interview with Azambuja, 2017. On status deficits see: Renshon 2017.

<sup>196</sup> Author interview with Duarte, 2017.

<sup>197</sup> Fittingly, Kubitschek would also order the construction of then-futuristic Brasília from 1956–1960 to replace Rio de Janeiro as the capital of Brazil (Scott 1998).

<sup>198</sup> See: “Minutes of the Twentieth Session of the Brazilian National Security Council, Second Brazilian Nuclear Plan,” August 30, 1956, History and Public Policy Program Digital Archive, Doc. 116913, Brazilian National Archives, Brasília. Trans. FGV.

The early historical evidence shows that nuclear energy for status and development purposes was the Brazilian objective, but the dual-use dilemma remained in the shadows. Following the bombings of Hiroshima and Nagasaki in 1945, future CNPq military representative Colonel Orlando Rangel would note “that it was necessary for Brazil to acquire all the information for the development of an atomic device (Patti 2015, p. 363).” Rangel was later intimately involved in Alberto’s efforts to court former Nazi scientists. Alberto also oversaw the highly classified development and successful testing of *Bomba Marambaia* in 1953. This was an implosion device designed to hold fissile materials—which Brasília lacked—should Brazil ever decide to pursue nuclear proliferation (Patti 2015).

Yet, there is no documentation that political leaders actually sought the bomb at this point. U.S. intelligence noted in 1957 that Brazil could develop nuclear weapons within a decade “with substantial and continuing outside assistance,” which it lacked.<sup>199</sup> Soviet Premier Nikita Khrushchev told the Americans in 1959 that Moscow believed Brazil could proliferate “very much later” than ten to fifteen years.<sup>200</sup> Brazil was also one of the ENDC members negotiating on nuclear nonproliferation and disarmament in Geneva.<sup>201</sup>

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<sup>199</sup> See: “Department of State Office of Intelligence Research, ‘OIR Contribution to NIE 100-6-57: Nuclear Weapons Production by Fourth Countries – Likelihood and Consequences,’” May 31, 1957, History and Public Policy Program Digital Archive, Doc. 134043, RG 59, Department of State Records, Special Assistant to the Secretary of State for Atomic Energy, Records Relating to Disarmament, 1948–1962, box 57, 2 15d: Armaments Nuclear Fourth Countries, 1956–57, “Part E: Latin America,” p. 4.

<sup>200</sup> See: “Memorandum of Conversation,” September 17, 1959, in *FRUS*, 1958–1960, Vol. X, Part I, *Eastern Europe Region; Soviet Union; Cyprus*, Doc. 190.

<sup>201</sup> See: A/RES/1722(XVI).

From October 16–28, 1962, the Cuban Missile Crisis occurred as the ENDC stood in a stalemate without U.S.–Soviet agreement on the parameters for NPT negotiations. The new Brazilian President João Goulart had his diplomats consult with the United States during the crisis both bilaterally and in the forum of the Organization of American States (OAS).<sup>202</sup> Nuclear dangers presented to Brasília and other South American states became abundantly clear during these consultations. During the crisis, Brazilian officials at the OAS began discussing a proposal to create a Latin American and Caribbean NWFZ. Documents indicate that U.S. diplomats initially responded positively due to the prospect of permanently banning Soviet nuclear weapons from the Western Hemisphere.<sup>203</sup> Indeed, the Brazilians introduced the proposal at the UN General Assembly on October 29, the very day after the Cuban Missile Crisis ended (Musto 2018).

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<sup>202</sup> See: “Telegram from the Brazilian Delegation at the Annual Conferences of CIES (Celso Furtado), Mexico City,” October 22, 1962, History and Public Policy Program Digital Archive, Doc. 115288, “ANEXO Secreto-600. (24h)-SITUAÇÃO POLITICA-OUTUBRO DE 1962//,” Ministry of External Relations Archives, Brasília. Trans. James G. Hershberg; “Telegram from the Brazilian Embassy in Washington (Campos),” October 23, 1962, History and Public Policy Program Digital Archive, Doc. 115290, MD-Washington-Telgr.-Cartas-Receb.-Exped.-1962 (7 á XII), (Cx 324), Ministry of External Relations Archives, Brasília. Trans. Hershberg; “Telegram from Brazilian Embassy in Washington (Campos), 7 p.m. Tuesday,” October 23, 1962, History and Public Policy Program Digital Archive, Doc. 115293, MD-Washington-Telgr.-Cartas-Receb.-Exped.-1962 (7 á XII), (Cx 324), Ministry of External Relations Archives, Brasília. Trans. Hershberg; “Telegram from the Brazilian Embassy in Washington (Campos), Noon, Friday,” October 26, 1962, History and Public Policy Program Digital Archive, Doc. 115300, MD-Washington-Telgr.-Cartas-Receb.-Exped.-1962 (7 á XII), (Cx 324), Ministry of External Relations Archives, Brasília. Trans. Hershberg.

<sup>203</sup> See: “Telegram from the Brazilian Delegation at the OAS, Washington, 6:30 p.m., Friday,” October 26, 1962, History and Public Policy Program Digital Archive, Doc. 115306, “O.E.A.-Telegramas Recebidas e Expedidas-1962,” Ministry of External Relations Archives, Brasília. Trans. James G. Hershberg. Ambassador Duarte noted in an interview that similar proposals had been introduced by Brazil before the Cuban Missile Crisis. The events of October 1962 finally won wide interest and support for the regional NWFZ concept. [Author interview with Duarte, 2017].

Cuban and Soviet opposition to the plan prevented it from being adopted at the UN (Debs and Monteiro 2017).

Regardless, Goulart was undeterred by this predictable obstacle and again raised the NWFZ issue with the Five Presidents' Declaration of April 1963. He joined the leaders of Bolivia, Chile, Ecuador, and Mexico to call for an agreement "whereby their countries would undertake not to manufacture, receive, store, or test nuclear weapons or nuclear launching devices."<sup>204</sup> The statement paved the way for the negotiation of the Tlatelolco Treaty in Mexico City in a series of sessions between 1965–1967 (Sotomayor 2013). Goulart had overseen nationalization of Brazil's uranium stockpile, negotiations with France on a natural uranium-fueled HWR, and partial construction of an experimental reactor in collaboration with the United States (Debs and Monteiro 2017). He remained firmly committed to the civilian nuclear energy course while aiming to eliminate the dangers of nuclear weapons from the region.

But Goulart was overthrown in a U.S.-backed coup d'état in 1964, leading to a military junta under Marshal Humberto Castelo Branco and his successor Marshal Costa e Silva. A military regime would also rise to power in neighboring Argentina two years later, as General Juan Carlos Onganía toppled President Arturo Illia (Potash 1996). The countries would begin a dispute over the resources of the Paraná River Basin (Spektor 2016). A joint Brazil–Paraguay hydroelectric project to build the Itaipú Dam was believed by the Argentines to have downstream risks for their own planned Corpus Dam with the Paraguayans.

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<sup>204</sup> See: A/5415/Rev.1.

And while Brazil pursued ENR technologies during the dictatorship, Argentina was also interested in nuclear energy without constraints (Kutchesfahani 2013). Its nuclear development efforts began in 1950 with the founding of the National Atomic Energy Commission (CNEA).

The two hawkish military dictatorships might not have seen eye-to-eye on hydropower issues in the mid-1960s, but they were able to find agreement on arms control matters. Both sides seemed to have an unwavering belief that PNEs for the excavation of canals and ports, as well as energy exploration, were the path toward becoming advanced, technologically developed states. This perception likely stemmed from an abundance of ongoing U.S. and Soviet PNE activities. Under Costa e Silva, in particular, PNEs “became almost an article of faith in Brazilian domestic politics (Redick 1995b, p. 17).” It is important to note that the near-obsession with PNEs aimed at status-driven civil and scientific projects, not nuclear weapons testing. Goulart had signed the LTBT banning atmospheric nuclear tests in 1963. Castelo Branco had his newly purged National Congress ratify it in 1964. Brazil–Argentina coordination in the PNE domain led to complications in negotiating the Tlatelolco Treaty NWFZ regime.<sup>205</sup>

The military regimes modified the Tlatelolco Treaty along two critical lines. First, Article XVIII of the treaty permits States Parties to “carry out explosions of nuclear devices for peaceful purposes—including explosions which involve

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<sup>205</sup> Rodríguez (2020) characterizes this as part of a broader strategy by the Brazilian junta to obstruct and delay any potential limitations on national capabilities.



devices similar to those used in nuclear weapons.”<sup>206</sup> Second, Article XXVIII restricts entry-into-force until States Parties have waived an obligation for all countries in the region to ratify, or until such ratifications occur. In both cases, the juntas preserved their perceived national interests by having the treaty allow PNEs and require regional universality. If Brasília and Buenos Aires were going to be non-nuclear, all other players in the region would have to adhere to the same rules. Neither state was willing to accept an unfavorable balance of power. And most importantly, there would be no restrictions on scientific projects that might contribute to the advancement of these states in the global order.

A further complication arose in Additional Protocols I and II to the treaty (Dawood and Herz 2013; Duarte 2016). Protocol I calls for states with territorial possessions or military bases in Latin America and the Caribbean to apply the agreement’s denuclearization standards to these areas. Protocol II calls for the NWS not to take actions in the region that violate the obligations entailed in the treaty. But there were several holdouts, most notably the United States with respect to Protocol I, and the USSR with respect to Protocol II.<sup>207</sup> The U.S. concerns dealt primarily with limitations on its bases—albeit non-nuclear facilities in Panama, Puerto Rico, and Guantanamo Bay, Cuba—alongside distrust of the PNE language. For the Soviets, the PNEs loophole presented a proliferation risk that might decrease their status by expanding the nuclear club. According to retired

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<sup>206</sup> For the text of the agreement see: Treaty for the Prohibition of Nuclear Weapons in Latin America (February 14, 1967), 28 *ILM* 1400.

<sup>207</sup> The Tlatelolco Treaty opened for signature in 1967. Washington ratified Protocol I in 1981, and Moscow ratified Protocol II in 1979.

Brazilian nuclear official Ambassador Luiz Augusto de Castro Neves, these holdouts triggered a fear that the superpowers could ignore the treaty and “circulate and deposit [nuclear] weapons” in the region.<sup>208</sup>

When the Tlatelolco Treaty opened for signature in February 1967, Brazil was quick to join, but the gesture was symbolic at best. Costa e Silva signed the accord on May 9, 1967, with ratification by his subservient National Congress to follow in January 1968. Carasales (1999, p. 55) describes the act as “meaningless” since Brasília did not waive the conditions for entry-into-force in Article XXVIII. The government was type signaling to the international community its status dissenting role by declining to do so. Because there was no interest in nuclear weapons and the treaty preserved the right to PNEs, the objections did not pertain to security considerations. Future CSN director General Danilo Venturini explained that Tlatelolco allowed a “recognition of castes among countries (qtd. in Debs and Monteiro 2017, p. 92).” Brazil could thus not be a party to the treaty until the NWS accepted that there were to be no military nuclear powers in the region pursuant to Tlatelolco Additional Protocols I and II. In practice, the Brazilian government frequently used Tlatelolco as a tool to stigmatize the NPT and its unequal division of the world between the five NWS and the remaining NNWS.

### The NPT: “Disarming the Disarmed”

While the Tlatelolco discussions were occurring, the NPT negotiations were also underway in Geneva amongst the ENDC. Brazil was one of the 18 non-aligned members after it was added to the body in 1961 upon a request from the United

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<sup>208</sup> Author interview with Castro Neves, 2017.

States (Shaker 1980a).<sup>209</sup> The Brazilians were not subordinate to Washington and had no plans to side with the Americans during the formal talks on the treaty from 1965–1968. Instead, Brasília coordinated its positions with Argentina, a non-member of the ENDC.<sup>210</sup> Brazil thus acted as one of the foremost critics of the agreement, but not for reasons predominantly related to security—like the MLF, which Brasília ignored with “complete silence (Shaker 1980a, p. 167).” Rather, the Brazilian concerns were those of a status dissenter to the treaty. Delegates from Brazil identified a range of issues with the NPT they believed would limit Brazil’s development, presence on the international stage, and sovereign equality. Such matters dealt with the difficulties of legally forswearing nuclear weapons through a treaty that disarmed some states but not others. This dissertation’s theory predicts that status dissenters cannot join treaties until national ambitions evolve.

The threat posed by the NPT to Brazil’s status required top negotiators from Itamaraty, the Ministry of Foreign Affairs. At times, the Brazilian contingent was led by either Ambassador João Augusto de Araújo Castro or Ambassador Antonio Azeredo da Silveira. The former had previously served as Goulart’s Foreign Minister, and the latter would later become Foreign Minister. One member of the four-person Brazilian mission to the ENDC recalls the mindset at the time regarding superpower collusion: “The NPT was not negotiated there, and

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<sup>209</sup> See also: DC/144.

<sup>210</sup> Much of the coordination would occur through the Brazilian–Argentine Executive Commission for Coordination (CEBAC), the product of Costa e Silva’s March 1967 visit to Argentina to meet Onganía before being inaugurated as the Brazilian President (Coutto 2014).

everyone knows it.”<sup>211</sup> According to another former official, the perception was that “the main purpose of the NPT was to disarm the already disarmed.”<sup>212</sup>

In the early stages of negotiations, Araújo Castro and the team were vocal supporters of Egyptian representative Ismail Fahmy’s statement of principles for the NPT.<sup>213</sup> Fahmy had written the Eight-Party Draft statement in 1965 on behalf of the non-aligned members in response to the initial U.S. and Soviet draft treaties. All the non-aligned states in the group endorsed these ideas of permanence, universality, freedom from loopholes, protection of the NNWS, and eventual nuclear disarmament. Brazilian backing stemmed from the idea that it would ensure equality of obligations between all states, with no country legally permitted to stand above Brazil. This support continued with the introduction of the statement into the UN First Committee on Disarmament and International Security before its adoption by the General Assembly.<sup>214</sup>

Brazil’s rhetoric exemplified that of a status dissenter to the NPT. When the United States and the USSR tabled revised identical draft treaties in May 1967, Brazilian opposition was strong.<sup>215</sup> The delegation levied numerous critiques against the NPT intended to protect access to the nuclear fuel cycle and secure opportunities for development (Spektor 2016). Protecting Brazil’s status and

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<sup>211</sup> Author interview with Duarte, 2017.

<sup>212</sup> Author interview with Castro Neves, 2017.

<sup>213</sup> See: A/C.1/PV.1359.

<sup>214</sup> See: A/C.1/L.339; A/RES/2028(XX).

<sup>215</sup> See: ENDC/192; ENDC/193.

combating the creation of nuclear hierarchies were at the heart of these critiques. Azeredo da Silveira openly criticized the treaty for being “designed to maintain the status quo, without taking into account the interests of all the members of the international community (qtd. in Patti 2012, p. 66).” A declassified letter shows that in later years he further noted, “The NPT seeks to legitimize a distribution of power which is unacceptable, because it results from the stage at which states found themselves at the date of its signature.”<sup>216</sup> The division of the world into the nuclear “haves” and “have nots” was a non-starter at Itamaraty. Accepting the NPT meant locking Brazil out of an exclusive club of states or a “passport to greatness.”<sup>217</sup>

Ambassador Duarte, who took part in the negotiations as the junior member of the Brazilian delegation, further reflected on the procedural unfairness of the talks:

For the NPT, in my view, there were no negotiations at the ENDC. First, the Americans came with the draft [in 1965]. Then the Soviets came with a draft. And then they came with a joint proposal [in 1967], and it was clear that they wanted to push it through. They each had the other five states, from NATO and the Warsaw Pact, to make it happen.<sup>218</sup>

The Brazilian objections did not just focus on the distribution of power reflected in the language of the treaty itself. The process by which the United States and the Soviet Union attempted to limit the nuclear club was deeply troubling. To the

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<sup>216</sup> See: “Segunda Parte tel Secreto–Urgentissimo 1234/DEM/DCS/SEI, ‘Resposta. Editorial do Washington Post – Silveira,” n.d., FGV, CPDOC, internal digital holding.

<sup>217</sup> Author interview with Duarte, 2017.

<sup>218</sup> Author interview with Duarte, 2017.

Brazilian delegation, the ENDC talks were a façade: superpower coercion masquerading as negotiations between equals.

Intrusive IAEA safeguards also struck a nerve in Brazil. Inspectors on Brazilian territory were, after all, an ex-ante sovereignty cost to the nation. This concern was consistent with the longstanding national position that pacific activities by the NNWS did not require inspections.<sup>219</sup> At one point in the Geneva talks, the Brazilians even briefly rejected the IAEA as the safeguards organization for the NPT, seeing it as “unrepresentative in terms of its membership of the governing board (Shaker 1980b, pp. 459–460).”

In August 1967, Brazil joined with India to advocate for safeguards to be applied to the military and civilian activities of the NWS to ensure they were fulfilling their disarmament commitments. As Azeredo da Silveira explained to the ENDC, “The manifest imbalance of obligations as set out in the two drafts can hardly enhance the prospect of universal acceptance and final adherence by the great majority of nations.”<sup>220</sup> The message was clear: Brazil was not going to sign such an unequal treaty. But in each case, the U.S. and Soviet representatives dismissed the Brazilian safeguards concerns anyway. In their view, a lack of safeguards on dual-use nuclear technologies in the NNWS would risk proliferation by diversion to military programs. And safeguards at military sites in the NWS could lead to leaks of nuclear secrets and undermine some of the opacity inherent in

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<sup>219</sup> See: “The Acting Secretary of State to the Embassy in Brazil.”

<sup>220</sup> See: ENDC/PV.327, para. 5.

nuclear deterrence. Article III of the final NPT did—as Brazil warned—entail safeguards obligations for the NNWS, but not the NWS.<sup>221</sup>

Brazilian representatives in Geneva also squared off with their NATO and Warsaw Pact counterparts on the treaty's disarmament clause. In August 1967, Azeredo da Silveira indicated that Brazil understood disarmament would not happen immediately, but he demanded concrete steps toward this end to be a part of Article VI.<sup>222</sup> For the Brazilians, this was imperative given the status costs associated with being a treaty-designated NNWS. Brazil followed Azeredo da Silveira's remarks by introducing a working paper in October 1967 that suggested amendments to the treaty.<sup>223</sup> The paper called for Article VI to include an obligation to negotiate a treaty specifying interim steps to eliminate both nuclear arms and their delivery systems. But perhaps the most interesting Brazilian disarmament proposal dealt with using the peace dividend:

Each nuclear-weapon State party to this Treaty undertakes the obligation to channel, through a special United Nations fund for the benefit of the economic development of developing countries, in particular for their scientific and technological progress, a substantial part of the resources freed by the measures of nuclear disarmament.<sup>224</sup>

The NWS again rejected the Brazilian proposals, intensifying views at Itamaraty that the NPT was a ploy to constrain developing states' prospects. However, the

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<sup>221</sup> NPT, Art. III.

<sup>222</sup> See: ENDC/PV.327.

<sup>223</sup> See: ENDC/201/Rev.2.

<sup>224</sup> See: ENDC/201/Rev.2, Art. 6, para 3.

ENDC did accept more moderate language from Mexico on “negotiations in good faith” on nuclear disarmament (Shaker 1980b; Harries 2014).

And while the NWS were still nuclear-armed, the Brazilian delegation supported the non-aligned initiative to obtain negative security assurances.<sup>225</sup> Restrictions on the use of nuclear arms were in line with Brazil’s foreign policy. When Washington rejected negative security assurances in favor of positive ones, Brazilian support faded. The Costa e Silva regime abstained from a vote on UNSC Resolution 255, which offered such assurances to the NNWS on behalf of London, Moscow, and Washington (Hunt 2013).<sup>226</sup> The reason was simple: Positive security assurances created a hierarchy by mandating the defense of the disarmed by the NWS. Furthermore, Resolution 255 was relatively vague and intended to win NNWS backing for the NPT, which Brazil did not support (Adeniji 1995).

Brasília also attempted to use other elements of the NPT to limit the space of the NWS to avoid their Article VI disarmament commitments. For example, the Brazilian representatives sought for the treaty to be of unlimited duration rather than the 25-year term proposed in the U.S. and Soviet draft treaties.<sup>227</sup> They further tried to link the prospects for treaty review conferences to the adoption of their amendments on nuclear disarmament (Harries 2014). Finally, the Brazilian working paper of October 1967 requested modification of Article X—pertaining to withdrawal—so that States Parties would report this intention only to

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<sup>225</sup> See: A/RES/2028(XX).

<sup>226</sup> See: SC/RES/255. Ultimately, the resolution passed with ten in favor, five abstained, and zero opposed.

<sup>227</sup> See: ENDC/PV.329; ENDC/PV.343.



each other.<sup>228</sup> This marked a change from reporting withdrawal to the UNSC, which the Brazilians saw as an undemocratic institution dominated by veto-wielding nuclear powers. In each case, the superpowers refused to budge and did not incorporate the amendments.

However, safeguards and disarmament concerns did not produce as heated a reaction from Brasília as the PNE issue. This corresponds with the theory's expectation that status dissenters will object to any attempt to limit their national technology. Although the Tlatelolco Treaty allowed PNEs, Washington and Moscow reached an agreement in September 1966 to prohibit the NPT's NNWS from carrying out such activities (Gheorghe 2013a). The draft treaties of May 1967 thus banned the NNWS from acquiring "nuclear weapons or other nuclear explosive devices" in Articles I and II. Moreover, Article III safeguards provisions now aimed to prevent the diversion of fissile materials to support non-weaponized devices intended for PNEs.<sup>229</sup> The NWS would therefore commit under Article V to providing PNE services to NNWS as a nonproliferation measure.

Costa e Silva and his advisors were outraged by superpower collusion on PNEs, which they believed was intended to constrain the development of Brazil and other states. In March 1967, the leader had criticized any effort to limit nuclear knowledge, stating that "nuclear energy [...] constitutes undoubtedly the most powerful means to be put within the reach of developing countries in order

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<sup>228</sup> See: ENDC/201.Rev.2.

<sup>229</sup> See: ENDC/192; ENDC/193.

to reduce the gap between them and the industrialised nations.”<sup>230</sup> Costa e Silva and his Foreign Minister José Magalhães Pinto would again tell the CSN in October 1967 that the NPT was objectionable due to it giving complete control of PNEs to the NWS. The president further praised the instrumental value of the Tlatelolco Treaty because it “allowed us to go to [the ENDC in] Geneva and also defend our sovereign right as a country to deal with this subject as an international power without any restriction.”<sup>231</sup>

The president’s marching orders on PNEs were clear in 1967, and Brazilian diplomats launched an unrelenting assault on the NPT on this basis.<sup>232</sup> Brazil proposed amending the treaty so that Articles I, II, and III only covered nuclear weapons, not devices for PNEs. The unfortunate difficulty was the near impossibility of distinguishing between such capabilities. Additionally, the new Brazilian language would have Article IV guarantees to NNWS of peaceful uses of nuclear technology amended to include a new clause preserving the right to PNEs:

Nothing in this Treaty shall be interpreted as affecting the inalienable right of all the Parties to the Treaty to develop, alone or in cooperation with other States, research, production, and use of nuclear energy for

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<sup>230</sup> See: “Excerpt from the Statement of President Costa e Silva on the 5th of March 1967,” March 5, 1967, FGV, CPDOC, Azeredo da Silveira Papers, Doc. AAS.1966.01.27.

<sup>231</sup> See: “Minutes of the Fortieth Session of the Brazilian National Security Council,” October 4, 1967, History and Public Policy Program Digital Archive, Doc. 116914, Ministry of External Relations Archives, Brasília. Trans. FGV.

<sup>232</sup> Brazilian arguments against PNEs were so numerous and at odds with the positions of other states that Harries (2014) discusses how the Mexican delegation was able to use Brazil as a foil in order to push through more moderate treaty amendments.

peaceful purposes, including nuclear explosive devices for civil uses, without discrimination.<sup>233</sup>

In support of these failed proposals at the ENDC, Azeredo da Silveira introduced PNEs into the discussions repeatedly. The Brazil delegation was usually only joined by India in its steadfast dedication to autonomously conducting PNEs. The variety of arguments raised by Azeredo da Silveira in making a case for these activities is perhaps best observed in his remarks on March 14, 1967:

There is no difference at the present time between nuclear weapon technology and technology for peaceful purposes;

The development of research in the field of nuclear energy inevitably includes, at a certain stage, the use of explosions; to bar access to explosions would amount to hindering the development of the peaceful uses of nuclear energy;

Banning nuclear explosions would not be an absolute means of checking the spread of nuclear weapons for, at the present level of technology, nuclear weapons can be manufactured without resort to nuclear explosions;

Even after attaining capability to carry out explosions for peaceful purposes, non-nuclear weapon States would still have to take several additional steps to embark on the manufacture of nuclear weapons;

To contend that non-nuclear weapon countries ought to relinquish the possibility of developing by national means nuclear technology for peaceful purposes is, *grosso modo*, tantamount to requiring that peaceful countries refrain from producing conventional explosives for industrial purposes;

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<sup>233</sup> See: ENDC/201/Rev.2, Art. IV, para. 1.

Peaceful nuclear explosions may provide a solution to many of the serious problems which confront Latin American countries and developing countries in general in the economic field, such as the digging of canals, the connexion of hydrographic basins, the recovery of oil fields, the release of natural gas, etc.<sup>234</sup>

The Brazilian delegation would further clarify its interest in remaining free of nuclear weapons while maintaining the right to conduct PNEs.<sup>235</sup> Efforts by the United States and the Soviet Union to provide firmer Article IV guarantees in their later treaty drafts did not alleviate the PNE concern.<sup>236</sup> To Brazil, NNWS dependence on the NWS for PNEs risked a “widening of the technological gap (Shaker 1980a, pp. 208–209).” Autonomous PNEs were not negotiable.

Fearing that the PNE issue would cause Brazil to stonewall the treaty’s negotiations and ultimately not sign the NPT, the U.S. administration of Lyndon B. Johnson attempted to resolve the question bilaterally.<sup>237</sup> Secretary of

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<sup>234</sup> See: ENDC/PV.293, para. 37.

<sup>235</sup> See: ENDC/PV.297.

<sup>236</sup> See: ENDC/192.rev1; ENDC/193.rev1.

<sup>237</sup> Azeredo da Silveira had unambiguously warned as early as August 1967 that a prohibition on NNWS conducting PNEs would prevent Brazil from joining the NPT: “[W]e have made it clear that the renunciation of nuclear armament does not entail the abandonment of our inalienable right to economic and social development through the preservation of our freedom of scientific research and technological advancement. There can certainly be no reason, in a broader context, to adhere to a treaty the NPT imposing greater restrictions and restrictions which, in our view are both unjust and unnecessary.” [See: “Letter From the Under Secretary of State (Richardson) to the Deputy Secretary of Defense (Packard),” Washington, DC, June 10, 1970, in *FRUS*, 1969–1976, Vol. E-2, *Documents on Arms Control and Nonproliferation*, 1969–1972. Doc. 355]. His statement came after a July visit of AEC chairman Glenn Seaborg to Brazil. Seaborg told the Brazilians that the United States would be willing to carry out PNEs on their sovereignty territory, but his interlocutors refused (Patti 2012). Having the technology and know-how to conduct such explosions indigenously was

State Dean Rusk met with Magalhães Pinto in New York in May 1968. There, he urged the Brazilian Foreign Minister not to further stall the treaty's negotiation over PNEs. Rusk also assured his counterpart that "the purpose of the treaty was not to inhibit these [peaceful nuclear] activities (qtd. in Patti 2012, p. 78)." Araújo Castro, who also participated in the meeting, was emphatic that the CSN would disapprove of being "put under a technological freeze for 25 years (qtd. in Hunt 2013, p. 400)." Shortly after the meeting, Rusk informed Soviet Deputy Foreign Minister Vasily Kuznetsov that Brazil was unlikely to sign the treaty.<sup>238</sup>

The treaty moved from the ENDC to the UNGA, where national delegations considered a draft resolution in May 1968. It was adopted on June 12, 1968, as Resolution 2373.<sup>239</sup> The vote was 95 states approving, 4 dissenting, and 21 abstaining—Brazil among the abstentions (Shaker 1980a, p. 117). On July 1, 1968, it opened for signature.

As expected, Costa e Silva did not sign the NPT on behalf of Brazil. Both the declassified evidence and the ENDC negotiating records unequivocally point to the central importance of international status in this decision.<sup>240</sup> Brasília had no nuclear weapons program or active ambitions to obtain the bomb. In this respect, legally forswearing nuclear weapons should not have been difficult.

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central to Brazilian objections to the NPT. See also: "Notes of Meeting," Washington, DC, November 28, 1967, in *FRUS*, 1964–1968, Vol. XI, *Arms Control and Disarmament*, Doc. 217.

<sup>238</sup> See: "Memorandum of Conversation," Washington, DC, May 17, 1968, in *FRUS*, 1964–1968, Vol. XI, *Arms Control and Disarmament*, Doc. 239.

<sup>239</sup> See: A/RES/2373(XXII).

<sup>240</sup> See also: Patti 2012, 2015, 2018; Duarte 2016; Spektor 2016; Goldemberg, Alvim, and Mafra 2018.

However, the Brazilians desired to be treated equally to the NWS and to face no constraints on obtaining technologies believed to be pivotal for national development. Type signaling as a status dissenter by opposing the NPT showed that Brazil would accept neither a subordinate international role nor the denial of scientific knowledge and technology. A U.S. intelligence community document assessing Brazil's opposition to the treaty arrived at similar conclusions: "These attitudes reflect the traditional national sentiment that Brazil is destined for 'Great Power' status and the government will probably not alter its view that the NPT is an obstacle to this national goal."<sup>241</sup>

Rather than seeking the bomb, the Brazilians sought status. And the NPT represented a barrier to access to the peaceful uses of nuclear energy. In an interview I conducted, Ambassador Azambuja summarized Brazilian opposition to the NPT as a central component of national identity:

Brazil was looking at nuclear energy as a symbol of prestige. The idea of mastering nuclear energy was present in the Brazilian identity from the very beginning. This was seen as the single most important element of great power status. The fact that all five permanent members of the United National Security Council had it showed that that nuclear energy was the key to being part of the directorate—a club we think we should belong to. [...] Brazil has dreams for the future. Greece looks to a golden age, but Brazil looks forward to a golden age. In the Brazilian psyche, there is a desire not to accept anything that will compromise this future.<sup>242</sup>

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<sup>241</sup> See: "Prospects for the Nonproliferation Treaty, CIA Directorate of Intelligence Memorandum," November 27, 1968, in NSA EBB 622, "The Nuclear Nonproliferation Treaty and the German Nuclear Question Part II, 1965–1969," Doc. 36, p. 9.

<sup>242</sup> Author interview with Azambuja, 2017.

The NPT entered into force on March 5, 1970. The conditions for this event required ratification by Britain, the United States, the USSR, and 40 other countries.<sup>243</sup> Since Brazil had not signed by entry-into-force, its only possibility to join the treaty would be through accession—a joint signal requiring both the type signal of signature and the commitment signal of ratification simultaneously. Such a decision would not occur until the late 1990s. In the interim, Brazil's refusal to sign the NPT or embrace comprehensive IAEA safeguards would lead to contentious nuclear politics (Nascimento Plum and Resende 2016).

#### Status-Driven Nuclear Procurement

The NPT's entry-into-force in 1970 marked the beginning of a new period in Brazilian nuclear history. Costa e Silva had also fallen ill in the summer of 1969, making way for the succeeding authoritarian presidencies of Generals Emílio Garrastazu Médici, Ernesto Geisel, and João Figueiredo. Yet, the trajectory set by Costa e Silva remained intact. From 1970–1985, these leaders would maintain Brazil's status dissenter opposition to the NPT and attachment to PNEs. And they would, of course, continue the endeavor to acquire the full nuclear fuel cycle for Brazil. These status ambitions led to conflict between Brazil and the United States, which had wide-ranging nonproliferation objectives. U.S. pressure backfired, leading Brazil to pursue a secret parallel military nuclear program to obtain technology autonomy alongside its official civilian nuclear program.

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<sup>243</sup> See: NPT, Art. IX, para. 3.

Costa e Silva's successors inherited a somewhat precarious state of nuclear politics. Brasília's opposition to the NPT and unsafeguarded nuclear energy pursuits drew heavy skepticism from the international community (Nascimento Plum and Resende 2016). Statements by Brazilian generals during the late 1960s had further legitimated these fears about nuclear proliferation. For example, the July 6, 1967, headline of the *Folha de São Paulo* newspaper read: "Since 1960, Brazil has had the means to build a nuclear weapon and now military officials are promising that the NUCLEAR DELAY WILL BE REMEDIED (qtd. in Goldemberg, Alvim, and Mafra 2018, p. 390)." In truth, a 1967 CNEN study had concluded that it would take fifteen years to build an atomic bomb, subject to a political order (Gall 1976). Behind the scenes, the U.S. intelligence community was convinced Brazil did not have weaponization intentions in 1968 (Spektor 2016).

Though doubts remained about Brazil's intentions, the change in U.S. administrations from Lyndon B. Johnson to Richard Nixon did bring some relaxation in tensions. Nixon, a Republican, seemed more interested in nuclear exports to Brazil to support U.S. industry than his Democratic predecessor. In 1969, his National Security Advisor, Henry Kissinger, assessed that exerting diplomatic pressure on Brazil to join the NPT could be counterproductive for the bilateral relationship.<sup>244</sup>

The more permissive environment enabled the Médici government to sign an agreement with Westinghouse and the AEC in 1972. Under the terms

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<sup>244</sup> See: "Memorandum From the President's Assistant for National Security Affairs (Kissinger) to Vice President Agnew," Washington, DC, January 28, 1969, in *FRUS*, 1969–1976, Vol. E-2, *Documents on Arms Control and Nonproliferation*, 1969–1972. Doc. 4.



of the agreement, Brazil would receive a LWR and enriched uranium fuel for its planned Angra Nuclear Power Plant. The deal received sharp criticism from the Brazilian scientific community and military. While the Angra I reactor was 624-megawatts and could generate nuclear power, it was a turnkey system. No significant technical knowledge was transferred to Brazil, and the LWR's fuel requirements created supply dependence on Washington (Goldemberg, Alvim, and Mafrá 2018). It was hardly the bold move to enhance global perceptions of Brazil as a technologically advanced country that many elites sought. But the deal moved forward anyway, with the LWR coming online in 1985. The chorus of voices calling for autonomous civilian nuclear energy remained dissatisfied.

In March 1974, Médici's hand-selected successor, Geisel, was approved by the military to become president. Just two months later, India carried out its Smiling Buddha PNE at the Pokhran site in the Thar Desert. As the U.S. NSC worried that Brazil would follow suit by developing its own PNE capability, Azeredo da Silveira—now the Foreign Minister—warned Geisel that Argentina might do so.<sup>245</sup> Polls at the time also showed that an overwhelming majority of Brazilians supported their government's position of refusing to disavow PNEs (Shaker 1980b). Just three weeks after the Indian test, Geisel told his generals the country should “develop the technology necessary for a peaceful nuclear explosion, which will even allow us, if necessary, to possess our own weapon (qtd.

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<sup>245</sup> See: “Paper Prepared by the NSC Under Secretaries Committee,” Washington, DC, June 21, 1974, in *FRUS*, Vol. E-14, Part II, *Documents on Arms Control and Nonproliferation*, 1973–1976, Doc. 57; “Report from the Brazilian Foreign Ministry to President Ernesto Geisel, ‘Subject: The Indian nuclear test,’” May 21, 1974, History and Public Policy Program Digital Archive, Doc. 121350, Ministry of External Relations Archives, Brasília.

in Debs and Monteiro 2017, p. 93).” This stunning remark revealed another trend in Brazilian foreign policy: nuclear hedging and the pursuit of latency.

The Indian PNE exacerbated global fears of nuclear proliferation. It led to the formation of the NSG, a multilateral export control regime restricting transfers of materials, equipment, and technology related to nuclear arms. The NSG was founded in 1974 and would make it more challenging to acquire dual-use nuclear items, even for ostensibly civilian end-users. Geisel’s advisors saw the formation of the NSG and the 1973 oil crisis as significant barriers to prosperity in Brazil.<sup>246</sup> The president decided in 1974 to pursue an advanced indigenous uranium enrichment capability for producing fuel for nuclear reactors (Spektor 2016). More specifically, the August 1974 plan required close collaboration with an old nuclear partner to obtain a complete uranium fuel cycle.

That partner was none other than West Germany, though Brazil also considered France. This time the Brazilians dealt with Bonn directly instead of through backdoor deals with the laboratories of former Nazi scientists.<sup>247</sup> While negotiators laid the groundwork for a deal prior to India’s PNE, the global reaction to the event created imperatives to quickly finalize the agreement.<sup>248</sup> The two Brazilian entities involved were CNEN on the research side and the newly formed

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<sup>246</sup> For instance, the Costa e Silva and Médici governments had both sought to obtain HWR and spent fuel reprocessing technology from India, but Geisel was now forced to back off due to the international climate created by the NSG and changing nuclear norms (Patti 2012).

<sup>247</sup> See: “Exposição de Motivos no. 55/74, para o Presidente do Conselho de Segurança Nacional,” August 13, 1967, FGV, CPDOC, Azeredo da Silveira Papers, Doc. AAS.1967.08.15 mre/pn.

<sup>248</sup> For information on technical visits of Brazilian scientists to West Germany in the lead-up to the deal see, e.g.: “Programa da Reunião Sobre Cooperação Nuclear,” May 10, 1973, FGV, CPDOC, Paulo Nogueira Batista Papers, Doc. PNB.1973.10.05.

(January 1974) Nuclébras, charged with constructing nuclear power plants. The FRG, barred from activities such as uranium enrichment on its territory, would commit to “public-private joint ventures to mine and enrich uranium, train hundreds of Brazilian nuclear-sector personnel and scientists, and transfer heavy materials, turbo-generators, and reactor technology (Patti and Spektor 2020, p. 67).”

The U.S. reaction to the proposed deal was three-fold. First, the Americans punished Brazil. In June 1974, the AEC withdrew from a nuclear energy conference in Rio de Janeiro (Patti 2012). A harsher consequence followed two months later when the AEC announced it would no longer be able to supply fuel for future Brazilian power reactors, confirming fears of dependence (Patti and Spektor 2020). Second, Washington vetoed alternative proposals to the FRG deal from U.S. firms Westinghouse and Bechtel (Patti 2012, Patti and Spektor 2012). Third, the AEC and the State Department pressured West Germany to exclude centrifuges from the deal.<sup>249</sup> Instead, the Germans offered the experimental Becker method, an unproven and inefficient jet nozzle technology for uranium enrichment. The Brazilian scientific community was skeptical of the jet nozzle, but CNEN President Paulo Nogueira Batista and Nuclebrás President Hervásio de Carvalho were convinced of its utility (Dalaqua 2019).

The U.S. Congress took a strict line on the deal in the fall of 1974. In October, Congress amended the Atomic Energy Act and the Export Administration Act to make it more difficult for Brazil to acquire nuclear technology (Patti 2012). And in November, new President Gerald Ford’s Secretary of State—Kissinger—

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<sup>249</sup> The Germans themselves had been apprehensive about providing centrifuges to Brazil given the proliferation risks (Gray 2012).

sent a team to Brazil to discuss the state's nuclear intentions. The Brazilians were incensed, viewing this as an attempt by the nuclear-armed states of the NPT to coerce the disarmed. As Patti and Spektor (2020, p. 71) explain, "Brazil could not possibly relinquish its quest to acquire nuclear fuel-cycle technologies when the United States thought it legitimate to suspend future nuclear fuel supplies." Cameron (2018) provides further context, noting that Geisel faced domestic political challenges and could not risk the reputational costs of backing down from the FRG deal.

Despite resistance on Capitol Hill and public attention spurred by leaks to the press, the Ford administration approved the deal in June 1975.<sup>250</sup> "We are not a nonproliferation agency," Kissinger had concluded (qtd. in Patti and Spektor 2020, p. 77). The Ford administration would consequently not sanction Brasília and Bonn for their transactions. In a June 20 telegram to his counterpart, Azeredo da Silveira, Kissinger wrote:

We did not invite, and in fact regret, the public debate. We would have much preferred that the matter remain in diplomatic channels. [...] We understand and support Brazil's desire to expand its use of nuclear energy as a tool for development. Count on our cooperation and assistance in your endeavor where Brazil considers it useful, to the limit permitted by our overall nuclear policy. And let us continue to exchange views on our

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<sup>250</sup> Behind the scenes, Kissinger assured his concerned Soviet counterpart, Andrei Gromyko, that Brazil was not seeking to build the bomb. [See: "Memorandum of Conversation," Geneva, July 11, 1975, in *FRUS*, 1969–1976, Vol. XVI, *Soviet Union, August 1974–December 1976*, Doc. 162].

common aim of avoiding the proliferation of nuclear weapons in the hemisphere.<sup>251</sup>

The Brazil–FRG deal was signed a week later, on June 27, 1975.<sup>252</sup> It aimed for the installation of up to eight 1,300-megawatt power reactors by 1990 alongside technology and knowledge transfer related to ENR (Goldemberg, Alvim, and Mafra 2018). Spektor (2016, p. 641) sheds light on the significance of the agreement: “At an estimated cost of around \$4 billion, it was, at the time, the single largest technology transfer in history.”

Ironically, the nuclear energy deal appeared to be more about increasing Brazil’s status than actually producing energy—recall the defiant reaction to U.S. reactor fuel supply threats. Noted Brazilian physicist José Goldemberg (2006, p. 41) argues:

The government claimed the nuclear program was a response to the 1973 oil crisis, which threatened the country’s trade balance. This was clearly not true as electricity in Brazil was and still is produced mainly in hydroelectric plants and not from petroleum. Building nuclear reactors would not reduce oil imports, which are used for transportation and industry.

Further, immediately after signing the agreement, Azeredo da Silveira remarked, “Brazil has gained new technological and political status on the world scene with the nuclear agreement (qtd. in Gall 1976, p. 45).” The U.S. Embassy in Brazil also

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<sup>251</sup> See: “Telegram 146237 From the Department of State to the Embassy in Brazil,” Washington, DC, June 20, 1975, in *FRUS*, 1969–1976, Vol. E-11, Part II, *Documents on South America*, 1973–1976, Doc. 116.

<sup>252</sup> For the text of the deal see: “Acordo Nuclear com a Republica Federal da Alemanha, Tramitação no Congresso Nacional,” June 27, 1975, FGV, CPDOC, Paulo Nogueira Batista Papers, internal digital holding.

assessed that, aside from energy purposes, a major rationale for the deal was for Brasília “to fulfill its ‘destiny’ as a great power.”<sup>253</sup>

Brazil had also agreed to accept stringent IAEA safeguards as part of the deal. Itamaraty used this fact as a talking point to show that it was possible to be a responsible non-signatory to the NPT (Sotomayor 2013).<sup>254</sup> The prevailing status-based reasons to avoid the treaty remained. Indeed, the Brazilian foreign policy elite believed that pressure and restrictions from Washington and other nuclear “haves” would continue even if Brazil acceded to the NPT.<sup>255</sup>

This belief became even more entrenched in 1976. In June, U.S. diplomats attempted to pressure the FRG to become more restrictive in their nuclear exports. They did so in the forum of the London Nuclear Suppliers’ Meeting and bilaterally.<sup>256</sup> Then, in July, Congress passed the Symington Amendment to the Arms Export Control Act.<sup>257</sup> It aimed to punish any state supplying or receiving ENR technologies if the recipient’s entire fuel cycle was not safeguarded (Patti and

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<sup>253</sup> See: “Telegram 5292 From the Embassy in Brazil to the Department of State,” Brasília, June 27, 1975, 1845Z, in *FRUS*, 1969–1976, Vol. E-11, Part II, *Documents on South America*, 1973–1976, Doc. 117.

<sup>254</sup> See: INFCIRC/237.

<sup>255</sup> Author interview with Castro Neves, 2017.

<sup>256</sup> See: “George Vest to the Secretary of State, ‘London Nuclear Suppliers Meeting,’” June 11, 1976, History and Public Policy Program Digital Archive, Doc. 118822, RG 59, Office of the Counselor, 1955–77, box 7, Nuclear Suppliers Conference; Memorandum From the Counselor (Sonnenfeldt) to Secretary of State Kissinger,” Washington, DC, June 30, 1976, in *FRUS*, Vol. E-15, Part II, *Documents on Western Europe*, 1973–1976, Doc. 299.

<sup>257</sup> The further addition of the Glenn Amendment in 1977 would increase such pressure on Brazil. It extended the supply-side restrictions to states that conduct nuclear tests and PNEs.

Spektor 2020). Brazil had accepted IAEA safeguards in the West German deal, but in Brasília, the new demand translated to unacceptable sovereign interference.

Ford's tightening of restrictions on Brazil was driven in large part by a desire to match Jimmy Carter's rhetoric and win the 1976 U.S. presidential election. Carter even went so far as to make the case against nuclear sales to Brazil (and Pakistan) in a televised debate (Spektor 2016). Shortly after Carter's election, one Geisel regime official reflected on the current and future state of U.S. nuclear supply coercion to the media: "Despite all the threats and reprisals [...] [o]ur nuclear program will continue, at least to the extent it depends on us, against all internal and external pressures."<sup>258</sup> Just a few days into the Carter Presidency, Azeredo da Silveira also expressed deep pessimism to Geisel about U.S. permissiveness over nuclear exports.<sup>259</sup> This view seemed justified, as Carter had dispatched Vice President Walter Mondale to Bonn, warning "Chancellor [Helmut] Schmidt that provision of nuclear fuel reprocessing technology to Brazil will create a major crisis in US–German relations."<sup>260</sup>

Brazil and the United States were at an impasse. Geisel and his advisors remained anchored to their view that the complete nuclear fuel cycle was critical to Brazilian status aspirations and national development. Yet, Carter told

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<sup>258</sup> See: "US Embassy Cable, Brazilian Public Reaction to US Nuclear Policies," November 19, 1976, History and Public Policy Program Digital Archive, Doc. 115212, NARA, RG 59, Central Foreign Policy Files, 7/1/1973–12/31/1976.

<sup>259</sup> See: "Informação para o Senhor Presidente da República, 'Cooperação nuclear teuto-brasileira. Gestão norte-americana.," January 31, 1977, FGV, CPDOC, Azeredo da Silveira Papers, Doc. AAS.1974.03.26 mre/d.

<sup>260</sup> See: "Editorial Note," in *FRUS*, 1977–1980, Vol. XXVI, *Arms Control and Nonproliferation*, Doc. 397.

Secretary of State Warren Christopher that fuel supply restrictions on states seeking reprocessing technology, like Brazil, might force them to embrace the NPT (Debs and Monteiro 2017). The U.S. intelligence community, however, assessed that Brazil was seeking civilian nuclear capabilities for reasons of prestige.<sup>261</sup> Carter's technology denial policy—intensified by the regulations of the NNPA of 1978—was bound to have counterproductive consequences. In fact, nuclear fuel cycle technologies were now intimately tied to Brazil's desires to enhance its international status and resistance to the NPT. For this reason, Debs and Monteiro (2017) attribute the delay in Brazilian accession to U.S. nonproliferation policies.

Such policies had certainly made nuclear technology acquisition difficult. Brazil was unable to obtain ultracentrifuges and reprocessing technology and also confronted an uncertain fuel supply for its nuclear energy pursuits. It would receive FRG reactor technology for the Angra power plant, but the capabilities to autonomously carry out civilian nuclear activities were unobtainable. In an interview, Goldemberg recalled Brazilian scientific views on what U.S. pressure had meant for the final FRG deal:

When we looked at the deal with Germany, it was full of holes. It included minimal technology transfer, was all written in German, and it did not include centrifuges or uranium enrichment. I went to Germany with two other physicists [José Israel Vargas and Oscar Sala] and looked at the lab. It was clear the jet nozzle was not viable. We learned much later that the Israelis and

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<sup>261</sup> See: "Intelligence Report," Washington, DC, March, 1977, in *FRUS*, 1977–1980, Vol. XXVI, *Arms Control and Nonproliferation*, Doc. 327.



South Africans used it [for the bomb]. But for industrial purposes, it was not possible.<sup>262</sup>

U.S. pressure had denied Brazil from achieving the technological breakthrough and independence that its leaders had craved for decades.

Facing an uncertain nuclear future and unrelenting supply-side restrictions, Figueiredo ordered a clandestine nuclear program shortly after becoming president in 1979. The Autonomous Program of Nuclear Technology (PATN), or parallel program, aimed for mastery of the fuel cycle. This would, if successful, relieve Brazilian dependence on foreign suppliers. Three separate military programs coordinated by CNEN formed the PATN. The air force experimented with laser isotope separation for uranium enrichment. The army attempted to build a graphite-moderated HWR using natural uranium fuel. And the navy partnered with IPEN to pursue an indigenous centrifuge (Goldemberg, Alvin, and Mafra 2018; Dalaqua 2019). The programs were competitive within the military, but the navy had the most resources due to its stated purpose of pursuing a submarine powered by a nuclear propulsion reactor (Sá 2015; Silva and Moura 2016). Under the PATN, Brazil would engage in gray or black market nuclear transactions with China and Iraq while rejecting approaches from Pakistan and South Africa (Patti 2012, 2018; Spektor 2016).

As Brazil secretly developed nuclear technologies, U.S. nonproliferation pressure helped to spur the beginnings of rapprochement with rival Argentina. Buenos Aires also sought fuel cycle mastery, but its attempts to

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<sup>262</sup> Author interview with Goldemberg, 2019. Goldemberg and Vargas had been among the experts to testify against the deal in the Brazilian Senate (Cameron 2018).

acquire reprocessing technology in the global market met stiff resistance from Washington (Carasales 1999; Hymans 2001).<sup>263</sup> U.S. pressure helped the states identify a common status-driven goal of resisting superpower coercion in the nuclear domain that emerged during the negotiation of Tlatelolco (Redick 1995c). However, dyadic distrust remained strong, particularly surrounding Argentina's 1978 announcement of the construction of its Ezeiza plutonium reprocessing plant (Mallea, Spektor, and Wheeler 2015). Yet, any nuclear rivalry that may have existed in a competition for prestige at the national level did not trickle down to the scientists. Government and university nuclear physicists from the two states had long maintained cordial ties and interacted at international conferences.<sup>264</sup>

The Paraná River controversy initially stood as an obstacle to cooperation, and previous attempts to forge official nuclear ties in the late 1960s and early 1970s had failed.<sup>265</sup> Geisel and Azeredo da Silveira had been unwilling to sign a hydroelectricity agreement and were deeply skeptical of Argentina in the

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<sup>263</sup> The Argentine government first decided to acquire a German Siemens heavy water-moderated reactor using natural uranium fuel in 1968 (Hymans 2001) and procured a Canadian CANDU HWR thereafter (Goldemberg, Alvim, and Mafra 2018). Over several decades, Argentina constructed unsafeguarded ENR facilities and planned indigenously designed reactors (Hymans 2012).

<sup>264</sup> Author interviews with Goldemberg, 2017; Marzo, 2019; Vinhas, 2019.

<sup>265</sup> See, e.g.: "Aide Mémoire, 'Sale of 5 Tons of Uranium to Brazil,'" September 4, 1968, History and Public Policy Program Digital Archive, Doc. 123275; "Memorandum by Head of Planning Department of the National Atomic Energy Commission José Luis Alegria on Brazil's Request for Uranium," January 31, 1969, History and Public Policy Program Digital Archive, Doc. 123278; "Letter from the Director of the National Atomic Energy Commission Oscar A. Quihillalt to Argentine Foreign Minister Juan B. Martin," December 15, 1969, History and Public Policy Program Digital Archive, Doc. 123279; "Note from the Director of Argentinian National Atomic Energy Commission (CNEA) on a Possible Agreement with Brazil," February 16, 1972, History and Public Policy Program Digital Archive, Doc. 116851, Archives of the Argentinian Ministry of Foreign Relations and Culture, Caja Brasil AH0124. Trans. FGV.

nuclear realm. But Figueiredo had lived in Argentina as a child, was received better by his neighbors, and was much more receptive to resolving the issue of hydroelectric dams and improving the bilateral relationship (Mallea, Spektor, and Wheeler 2015). In October 1979, his Foreign Minister Ramiro Saraiva Guerreiro signed the Argentina–Brazil–Paraguay Tripartite Accord setting height and water capacity restrictions related to the Itaipú and Corpus Dam.<sup>266</sup> Nuclear cooperation was now much more feasible.

On May 14, 1980, Figueiredo made the first visit of a Brazilian head of state to Argentina in over four decades (Coutto 2014). His meetings with Argentine President Jorge Rafael Videla spurred follow-up bilateral dialogue at various levels of government. Three days later, the two states signed the Agreement on Cooperation for the Development and Application of the Peaceful Uses of Nuclear Energy.<sup>267</sup> It contained provisions to formalize scientific exchanges (Nascimento Plum and Resende 2016) as well as limited technical

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<sup>266</sup> For the text of the agreement see: Argentina–Brazil–Paraguay Agreement on Parana River Projects (October 19, 1979), <https://www.internationalwaterlaw.org/documents/regionaldocs/parana1.html>. See also: Costa Silva 2020. While the Itaipú Dam began operating in 1984, the Corpus Dam was never built.

<sup>267</sup> For details on the months of diplomatic preparations leading up to the agreement see: “Memorandum DEM/89, Luiz Augusto de Castro Neves, Deputy Chief of the Energy and Mineral Resources Division, ‘Brazil–Argentina. Possibilities for Nuclear Cooperation,’” August 20, 1979, History and Public Policy Program Digital Archive, Doc. 116860, AHMRE. Trans. FGV; “Memorandum, Héctor A. Subiza, Head of the Latin American Department of the Argentinian Foreign Ministry, ‘Cooperation with Brazil in the Nuclear Field.,’” August 23, 1979, History and Public Policy Program Digital Archive, Doc. 116861, Archives of the Argentinian Ministry of Foreign Relations and Culture, Caja Brasil. Trans. FGV; “Telegram No. 146 from Brasília to Brazilian Embassy in Buenos Aires, ‘Nuclear Energy. Brazil–Argentina Cooperation. Visit by President of CNEA,’” February 12, 1980, History and Public Policy Program Digital Archive, Doc. 123325, AHMRE; “Relatório Enviado ao Ministro das Relações Exteriores, ‘Assunto: Viagem a Buenos Aires,’” March 23, 1980, FGV, CPDOC, Paulo Nogueira Batista Papers, Doc. PNB.1974.07.01.

sharing like “heavy metallurgy parts from the Brazilian side and the loan of zircaloy pipes on the part of Argentina (Mallea, Spektor, and Wheeler 2015).”

But overall, the agreement was not about any specific collaboration so much as it symbolized status-dissenting opposition to the NPT and the nonproliferation regime. Redick, Carasales, and Wrobel (1995, p. 112) explain: “The underlying motivation for this agreement was a shared view that modern technology, a powerful symbol of an advanced economy and prosperity, was unjustly dominated by a few highly developed nations.” Hymans (2001, p. 182) further notes that such solidarity “was seen as a way of fending off pressure to join the international nonproliferation regime.” Ambassador Castro Neves, who was intimately involved in the discussions at the time as the Deputy Chief of the Energy and Mineral Resources Division of Itamaraty, indicated the accuracy of these interpretations.<sup>268</sup> It is important to note that during this period, the United States ratified Additional Protocol I to the Tlatelolco Treaty in 1981, following Soviet ratification of Protocol II in 1979.<sup>269</sup> U.S. supply-side restrictions, however, made Figueiredo unwilling to drop objections to allowing the treaty to enter into force.

Alongside the bilateral agreement of 1980, the Falklands War of 1982 sowed the seeds of further nuclear cooperation. Brazil supported Argentina in the forum of the UNSC and recognized its sovereignty over the disputed island. There were incidents at sea between British and Brazilian naval vessels. And the

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<sup>268</sup> Author interview with Castro Neves, 2017.

<sup>269</sup> See: “Telegram No.: MEX/104/1/81, Secretary Haig’s Visit to Mexico (November 23–24),” November 27, 1981, History and Public Policy Program Digital Archive, Doc. 123925, File No. W-II/104/26/81.

Brazilian Air Force intercepted and temporarily held the crew of a British Vulcan bomber at Galeão Air Base (Chant 2013). Regardless, Argentina lost the war in a crushing defeat.

The conflict sparked new concerns about a nuclear arms race in the Southern Cone. U.S. President Ronald Reagan's NSC had warned that a British victory would lead to the rise of a hardline Peronist regime in Argentina. Then, a memo concluded, "A nuclear weapons capability would be virtually guaranteed, as both Brazil and Argentina would seek ultimate security in nuclear arsenals."<sup>270</sup> This is not what happened, of course. Economic crisis followed the war as the Argentine regime failed to control spiraling inflation. The junta collapsed, and Raúl Alfonsín won a democratic election in 1983. Alfonsín was predictably more open to cooperation than his authoritarian military predecessors, and Brasília's conduct during the conflict had generated goodwill in Argentina. Brazil even represented Argentine interests in London from July 1982–February 1990 after diplomatic relations were severed (Mallea, Spektor, and Wheeler 2015, p. 179n31). Still, authors like Myers (1984) continued to predict arms racing.

Such predictions were inaccurate. Though the actual cooperation under the bilateral agreement was limited, its real value came in the form of confidence-building measures. Brazilian officials were still concerned about Argentine nuclear intentions, while the Argentines were less worried about Brazil. The latter viewed intelligence reports about the PATN as a Brazilian response to

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<sup>270</sup> See: "Memorandum From Roger W. Fontaine, Christopher C. Shoemaker, and Richard T. Childress of the National Security Council Staff to the President's Deputy Assistant for National Security Affairs (McFarlane)," Washington, DC, May 28, 1982, in *FRUS*, 1981–1988, Vol. XIII, *Conflict in the South Atlantic, 1981–1984*, Doc. 309.

growing nonproliferation pressures (Mallea, Spektor, and Wheeler 2015). The U.S. intelligence community had concluded that neither Brazil nor Argentina was seeking the bomb, but attempts to reassure Brazilian officials about the Argentines were not always persuasive.<sup>271</sup> However, a 1983 visit to Argentina by Nuclébras and CNEN heads Darío Gomes and Rex Nazaré Alves helped to create greater transparency.<sup>272</sup>

Shortly before the transition to democracy under Alfonsín, the last military president, Reynaldo Bignone, wrote a letter to Figueiredo. The November 18, 1983, letter informed his counterpart that Argentina's mastery of uranium enrichment at the Pilcaniyeu facility was "achieved by my country without any external assistance."<sup>273</sup> His announcement surprised Figueiredo, as Brazilian officials and intelligence services were apparently unaware of the laboratory-scale gaseous diffusion efforts.<sup>274</sup> Still, Figueiredo congratulated Bignone on the achievement in peaceful nuclear energy for Latin America.<sup>275</sup> The Argentine

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<sup>271</sup> See: "Special National Intelligence Estimate, SNIE 93-83, 'Brazil's Changing Nuclear Goals: Motives and Constraints,'" October 21, 1983, History and Public Policy Program Digital Archive, Doc. 116898; "Special National Intelligence Estimate, SNIE 91-2-82, 'Argentina's Nuclear Policies in Light of the Falklands Defeat,'" September 8, 1982, History and Public Policy Program Digital Archive, Doc. 123331; "Note from Brazilian Congressman Herbert Levy," December 13, 1982, History and Public Policy Program Digital Archive, Doc. 121353, Brazilian National Archives.

<sup>272</sup> Author interview with Castro Neves, 2017.

<sup>273</sup> See: "Letter, Argentinian President Bignone to Brazilian President Figueiredo," November 18, 1983, History and Public Policy Program Digital Archive, Doc. 116864, *Folha de São Paulo*, November 19, 1983, p. 4. Trans. FGV.

<sup>274</sup> Author interview with Castro Neves, 2017.

<sup>275</sup> See: "Letter, Brazilian President Figueiredo to Argentinian President Bignone," November 19, 1983, History and Public Policy Program Digital Archive, Doc. 116910, *Folha de São Paulo*, November 19, 1983, p. 4. Trans. FGV.

president-elect, Alfonsín, indicated that he would place uranium enrichment and other nuclear endeavors under civilian control in his government (Mallea, Spektor, and Wheeler 2015).

Brazil had its own enrichment program and nuclear aspirations through the PATN. While the air force laser enrichment project floundered, the navy and IPEN began seeing progress on the centrifuge method. They had even studied the failed prototype centrifuges obtained by Alberto in the 1950s (Dalaqua 2019). According to Barletta (1984, p. 6), the first mini-cascade of centrifuges came online in 1984. And while the scientific consensus had turned against PNEs by the late 1970s, Brazil kept up the rhetoric in support of these explosions as a matter of principle.<sup>276</sup> In 1995, *Folha de São Paulo* received a leaked document from the Figueiredo era. The November 1984 document justified the PATN on the basis of a need to autonomously master the fuel cycle and potentially conduct PNEs (Goldemberg, Alvim, and Mafra 2018). Similarly, a February 1985 document laying out “guidelines” for the program refers to ENR and PNE technologies as “essential to the autonomy desired by any country.”<sup>277</sup> Whether the PNE rhetoric was internal posturing or part of an actual plan remains unclear. That said, the PATN had very little funding, and no evidence has ever surfaced showing Brazilian scientific work on the physics package for a nuclear device.

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<sup>276</sup> Author interviews with Azambuja, 2017; Castro Neves, 2017; Duarte, 2017.

<sup>277</sup> See: “Guidelines for the Autonomous Brazilian Nuclear Program,” February 11, 1985, History and Public Policy Program Digital Archive, Doc. 121361, Ministry of External Relations Archives, Brasília.

In January 1985, Brazil entered into a new era both in the nuclear domain and for the country as a whole. The opposition in the National Congress had fought hard for a constitutional amendment allowing for a direct election of Figueiredo's successor. While the amendment did not pass, it garnered considerable popular support, as millions of Brazilians took to the streets (Skidmore 1990). In the ensuing indirect election that month, Congress voted for opposition candidate Tancredo Neves of the Brazilian Democratic Movement to become president. Alfonsín followed the election by proposing without success to Figueiredo a joint statement disavowing PNEs.<sup>278</sup> Barletta (1997, p. 19) also notes that Figueiredo rejected an opposing suggestion by the air force to conduct a PNE to celebrate the accomplishments of the regime because a CSN review concluded that "Brazil's interests were to master the enrichment cycle and to avoid any activity that would be perceived as a bomb."

Tancredo Neves fell ill the day before his inauguration and died a month later, on April 21, 1985. His Vice President, José Sarney, would become president in this new era. Sarney faced an increasingly cooperative Argentina under Alfonsín, but pressure from the military to preserve the PATN would be a constant element of his presidency. These difficulties aside, the coming era would finally see Brazil's embrace of multilateral nuclear arms control after years of playing the role of a status dissenter.

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<sup>278</sup> See: "Memorandum para o Sr. Ministro de Estado, 'Brasil–Argentina. Energia nuclear,'" January 10, 1985, FGV, CPDOC, Rubens Barbosa Papers, Doc. G/08, internal digital holding.



### The Path to Multilateral Nuclear Arms Control

The transition to democracy marked the beginning of a process that saw Brasília join many multilateral peace and security institutions, including the NPT and the CTBT. The evidence reveals, however, that democratic regime type itself was not the causal factor leading to this dramatic change in decades-old posture. Democracy did create a climate that facilitated greater nuclear transparency and cooperation between Brazil and Argentina. This climate was one of several factors that enabled acceptance of arms control treaties and legally forswearing nuclear weapons. But ultimately, mastery of uranium enrichment and the nonproliferation regime's evolving character were the predominant factors that satisfied the status- and security-based criteria needed for Brazil to embrace such agreements.

Progress toward a new nuclear role for Brazil occurred soon after Sarney's inauguration in April 1985, with the first direct elections slated for 1989. The president cut funding for the PATN, but he did not terminate the program or stop the military's efforts (Spektor 2016). Maintaining good relations with the armed services was essential for Brazil's first post-dictatorship president's political survival. And like his authoritarian predecessors, Sarney supported the quest for technological autonomy that ruled out the NPT as an option. Following the visit of Brazilian Foreign Minister Olavo Setúbal to Buenos Aires in November 1985, Sarney and Alfonsín would sign a Joint Declaration on Regional Nuclear Policy (Patti 2012; Nascimento Plum and Resende 2016). The document recommitted the sides to peaceful uses of nuclear energy and established a bilateral working

group (Monteiro de Matos 2020). Yet, it stopped short of support for the NPT, as the two countries continued to reject the accord as status dissenters.

Samuel Sarney's rhetoric supported only peaceful nuclear use, but the president confronted military pushback and statements to the press. Despite internal documents indicating that the government did not believe Argentina would develop a bomb (Patti 2012), Army Minister General Leônidas Pires Gonçalves made just such an accusation in September 1985. The general said that he would support Brazil pursuing nuclearization as a result. His statement prompted a demand for clarification from Argentina and assurances from CNEN head Nazaré that Brazil's program was solely peaceful in nature (Mallea, Spektor, and Wheeler 2015).<sup>279</sup> A year later, former Navy Minister Admiral Maximiano da Fonseca would argue that Brazil should build the bomb since the NWS continued to improve their arsenals (Krasno 1994). Notably, the military also supported the status-driven civilian fuel cycle project, with Leonidas saying, "Countries that do not complete the nuclear fuel cycle by the 21st century, will not be considered a world power (Krasno 1994, p. 431)."

As Nazaré and President Sarney himself clarified Brazilian nuclear intentions, questionable leaks continued to emerge. *Folha de São Paulo* reported in August 1986 that the air force was building an underground nuclear test site at

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<sup>279</sup> See also: "Cable from Rafael Vazquez, Argentinian Ambassador to Brazil, Requesting Meeting with the Brazilian Foreign Minister," September 2, 1985, History and Public Policy Program Digital Archive, Doc. 117519, Archives of the Argentinian Ministry of Foreign Relations and Culture, Caja Brasil, h0005B. Trans. FGV.

Serra do Cachimbo in the state of Pará.<sup>280</sup> The Sarney administration denied the allegations, claiming that the deep hole in the ground was a repository for industrial nuclear waste storage. The public and the international community remained dubious that the air force was not constructing a vertical shaft for testing.

Sarney did, however, stick to the course of the 1985 Joint Declaration. In July 1987, Alfonsín invited Sarney for a confidence-building visit to the Pilcaniyeu enrichment facility in Argentina. He was accompanied by Nazaré of CNEN, José Henrique Buchmann of IPEN, and CSN nuclear affairs advisor Marco Marzo. According to Marzo, in an interview I conducted, the delegation was pessimistic and believed the Argentines would answer no questions. Instead, CNEA representatives answered every question from the Brazilians. The Brazilian delegation noted that the gaseous diffusion plant was incapable of enrichment due to nonfunctional compressors. Uranium hexafluoride gas (UF<sub>6</sub>) could not move through the gaseous diffusion cascades as a result. They left with confidence that Argentina was not pursuing the uranium route to the bomb.<sup>281</sup> Argentina simply lacked the technical competence to do so.

In September 1987, Sarney informed Alfonsín that Brazil had now mastered enrichment via the gas centrifuge. Alfonsín replied that he was “proud as a Latin American” and happy to be informed before a public announcement.<sup>282</sup>

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<sup>280</sup> See: “Newspaper Article, ‘Serra Do Cachimbo May Be Nuclear Test Site,’” August 8, 1986, History and Public Policy Program Digital Archive, Doc. 117522, *Folha de São Paulo*. Trans. FGV.

<sup>281</sup> Author interview with Marzo, 2019.

<sup>282</sup> See: “Cable on Ambassador Rubens Ricupero’s Meetings with President Alfonsín and Ambassador Jorge Sabato about Nuclear Cooperation,” September 4, 1987, History and Public Policy Program Digital Archive, Doc. 117523, AHMRE. Trans. FGV.

For the Brazilians, this was a moment of national pride after so much pressure to abandon the centrifuge; Brazil would be able to produce its own LWR fuel. The Sarney administration had an event that year in Brasília where officials displayed a kilogram of LEU.<sup>283</sup> Sarney stated that there were two types of states in the world: “countries that master technologies and countries that are sentenced to be technologically enslaved (Dalaqua 2019, p. 236).” The development marked the end of the official Nuclébras program in cooperation with the FRG, as Brazil had succeeded autonomously with the PATN (Dalaqua 2019).

Sarney then invited Alfonsín to tour CNEN and the navy’s new industrial-scale Aramar enrichment facility at its inauguration in April 1988. Alfonsín reciprocated with an invitation for Sarney to inspect the Ezeiza reprocessing plant in November 1988. Unlike Pilcaniyeu, Ezeiza impressed the Brazilians with its facilities.<sup>284</sup> Each state had done the seemingly unthinkable by mastering the fuel cycle with only limited external technical assistance.

The 1987–1988 confidence-building visits set the stage for further peaceful nuclear measures. The National Congress approved a new democratic constitution for Brazil on October 5, 1988, in advance of the 1989 election. Part of Article XXI read: “all nuclear activity within the national territory shall only be admitted for peaceful purposes and subject to approval by the National Congress.”<sup>285</sup> It did, however, stop short of outlawing PNEs or embracing the NPT.

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<sup>283</sup> Author interview with Marzo, 2019.

<sup>284</sup> Author interview with Marzo, 2019.

<sup>285</sup> See: Constitution of the Federative Republic of Brazil (October 5, 1988), Art. XXI, sec. XXIII, para. A, <https://www.resdal.org/Archivo/d0000059.htm>.

In November 1988, Brazil and Argentina signed the “sweeping” Bilateral Treaty on Integration, Cooperation, and Development (Carasales 1995, p. 41). The treaty called, in part, for increased commercial nuclear relations and created the first joint technical program—designing a fast breeder reactor (Monteiro de Matos 2020).

Fernando Collor de Mello won the presidency in March 1989 on a reformist agenda. He quickly replaced Nazaré and appointed José Luiz Santana Carvalho—a PATN critic—to the helm of CNEN (Patti 2012). The Collor administration then approved a Parliamentary Commission of Inquiry (CPI) to investigate whether the military had secretly pursued construction of an atomic bomb. The CPI concluded that the navy had the ability to produce HEU at Aramar but was focused on developing naval nuclear propulsion and was uninvolved in nuclear proliferation schemes (Barletta 1997). Another result of the CPI was to show just how competitive and compartmentalized the three different branches of the services had been in their nuclear programs.<sup>286</sup> Figueiredo attested that: “The Cachimbo air base could have been used for nuclear tests, but the government at the time [1984–1985] did not think about building a nuclear weapon (qtd. in Debs and Monteiro 2017, p. 102).” Collor soon began bringing civilian control to the nuclear program and halting any uncoordinated—and now constitutionally-barred—military activities that may have had non-peaceful intentions.

During the CPI investigations and afterward, Collor ordered the military to give his Secretary of State for Science and Technology, Goldemberg,

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<sup>286</sup> Author interview with Marzo, 2019.

full access to all elements of the parallel program. I spoke at length to Goldemberg in an interview, and he was less than complimentary of the expertise he observed:

- On the air force: “It was nothing. It was equivalent to a master’s thesis on laser isotope separation.”
- On the navy: “They were the most proficient, but they were very far away. You’d need thousands of centrifuges [to produce a significant quantity of uranium for a bomb], like Iran.”
- On the army: “The point is the [graphite reactor] technology and the [knowledge] level of the people was miserable. I said, it will take them 100 years to do this.”<sup>287</sup>

Goldemberg concluded that, while some military officers may have dreamed of the bomb, there was no coordinated government plan, human capital resources, or funding that would have led to one.

Collor also visited the Cachimbo site with Goldemberg in 1990, when the president dumped dirt into the shaft with a shovel in front of the media. The president said, “These guys are crazy. They were really going to explode the bomb. This is absolutely true (qtd. in Barletta 1997, p. 27).” Goldemberg’s interpretation is different, seeing it as Collor exerting power over the military:

I went there. They were exaggerating what they were doing in order to extract money from the [authoritarian] government. And President Collor is a master of rhetoric. He dumped the shovel. It was a symbol. There were no [diagnostic] cables, nothing you should have

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<sup>287</sup> Author interview with Goldemberg, 2019.

at a test site. It was a rumor spread by the military to get more money for what they were doing.<sup>288</sup>

Ambassador Castro Neves also visited Cachimbo as an Itamaraty official in 1984 under Figueiredo and 1985 under Sarney (Mallea, Spektor, and Wheeler 2015). He described the shaft as “not fit for the purpose of studying nuclear explosions.” It was “too small” for nuclear tests at one meter in diameter, and “the subterranean water was very corrosive.”<sup>289</sup> Indeed, there is to date no evidence to support the contention that Cachimbo was truly meant to be a nuclear test site (Spektor 2016).

The Brazilian case leads to an interesting discrepancy in the nuclear proliferation literature. Brazilian officials and scholars who have qualitatively studied the history (Patti 2012; Spektor 2016; Debs and Monteiro 2017) argue that there was never really a nuclear weapons program. At best, it was uncoordinated exploration. Yet, quantitative scholars have questionably coded Brazil as “pursuing” nuclear weapons in dates ranging from 1975–1991 (Singh and Way 2004; Jo and Gartzke 2007; Bleek 2017). Goldemberg himself tried to get to the bottom of the mystery by asking Nazaré, who coordinated the PATN as the CNEN chief, directly in 2016:

I asked Rex point-blank. I said, Rex, we are getting old, we are going to die soon, most of our colleagues are dead. Was a [presidential] decision made to build a weapon or not? He said yes, it was. But President Figueiredo told me [whether the decision was yes or no] must always remain a secret.<sup>290</sup>

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<sup>288</sup> Author interview with Goldemberg, 2019.

<sup>289</sup> Author interview with Castro Neves, 2017.

<sup>290</sup> Author interview with Goldemberg, 2019.

Until new information surfaces about the content of that decision, the balance of evidence and the president's personal statements are the best scholars can do. Both elements of the equation suggest that Brazil hedged by developing a latent nuclear capability, but there was no decision to pursue the bomb.

After dismantling the secret military programs, Collor set his sights on PNEs. Brazilian officials corroborate that no one was scientifically taking PNEs seriously, and it was known that Washington and Moscow would soon exchange instruments of ratification on the PNET. There was no longer a need for a country that had mastered enrichment to draw international ire by defending a discredited practice.<sup>291</sup> Collor renounced Brazil's right to PNEs at the UNGA in September 1990 (Spektor 2016). Then, he met Alfonsín's successor, Carlos Menem, at Iguaçu Falls two months later and agreed to prohibit PNEs as well as to develop a system of bilateral safeguards and nuclear materials accounting. Their meeting produced the July 1991 Agreement for the Exclusively Peaceful Use of Nuclear Energy. It barred PNEs for the foreseeable future until there was a way to technically distinguish them from nuclear weapon tests (Stanley 1992). They also agreed that accession to Tlatelolco was an important near-term goal (Owens 1995).

Brazil and Argentina took steps to implement the provisions of the July 1991 agreement. The two sides created the Brazilian–Argentine Agency for Accounting and Control of Nuclear Materials (ABACC) for safeguards inspections, which began in September 1992 (Goldemberg and Feiveson 1994). And in

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<sup>291</sup> Author interviews with Azambuja, 2017; Castro Neves, 2017; Duarte, 2017; Goldemberg, 2019; Marzo, 2019.



December 1991, Brazil, Argentina, ABACC, and the IAEA drafted the Quadripartite Agreement. It combined ABACC and IAEA safeguards under one umbrella, and IAEA Director General Hans Blix praised its comprehensiveness (Redick, Carasales, and Wrobel 1995). The Quadripartite Agreement entered into force in March 1994 while Itamar Franco was the Brazilian president—Collor faced impeachment charges for corruption and resigned in December 1992. Tlatelolco also entered into force, as Argentina waived its objections in January 1994, and Brazil did so in May 1994. No longer seeking to conduct PNEs, the two parties led an effort to outlaw PNEs so long as they were indistinguishable from weapons tests (Nascimento Plum and Resende 2016).

Despite all of these developments, there is one agreement that neither Collor nor Franco touched: the NPT. This observation affirms the idea that simply having a democratic regime is causally insufficient to spur entry into multilateral nuclear arms control treaties. Former Deputy Foreign Minister Sebastião Rego Barros recalls, “President Collor had many revolutionary ideas but in a short while his political situation became so unstable that there was no way to take his ideas forward (qtd. in Mallea, Spektor, and Wheeler, p. 159).” It is also worth noting that even Collor remained skeptical of the discriminatory nature of the NPT and the fact that Brazil did not have a seat at the table in shaping global nuclear export standards. Franco, on the other hand, let Itamaraty take the lead on nuclear issues and “exerted little personal effort in the difficult congressional debates over ratification of the Quadripartite Agreement and the Tlatelolco Treaty amendments (Redick 1995b, p. 40).”

Franco's former Foreign Minister, Fernando Henrique Cardoso, won the 1994 election in a landslide and took office on January 1, 1995. Cardoso would ultimately be the president who saw Brazil's joining of the NPT. He had a broad electoral mandate and faced a rapidly changing climate in nuclear politics. ABACC inspections were ongoing, and Tlatelolco was in force. China and France acceded to the NPT in 1992, marking the treaty's growing universalization and the legal commitment of all five NWS to disarmament per its Article VI. Meanwhile, illicit nuclear activities by Iraq and North Korea were changing global perceptions of so-called "rogue states" (Lake 1994). Cardoso thus committed to considering the issue of Brazil's NPT status prior to his inauguration (Redick 1995b).

Before any serious study of the treaty by the Cardoso administration, the Americans approached Brazil about the issue. John Holum, director of the U.S. ACDA, came to Brasília in March 1995 to invite his counterparts to take part in the Review Conference on the Indefinite Extension of the NPT. Cardoso's Foreign Minister, Felipe Lampreia, attended the May conference as an observer, but he could not participate since Brazil was not a party to the treaty. President Cardoso did, however, visit Washington, where he agreed to regularly consult with U.S. President Bill Clinton on arms control and nonproliferation topics (Redick 1995b). In an interview with me, Ambassador Thomas Graham Jr., Clinton's Special Representative for Arms Control, Nonproliferation, and Disarmament, credits this line of diplomacy with helping to change Brazilian perceptions of the NPT.<sup>292</sup> It

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<sup>292</sup> Author interview with Graham, 2020.

became increasingly important in the Brazilian mindset to have a seat at the table to shape global nuclear policy.

Cardoso did seek such seats. He renounced ongoing ballistic missile projects and led Brazil to membership in the Missile Technology Control Regime (MTCR) in 1995 (Spektor 2016). Now, Brazil could help set the “rules of the game” as far as global regulations on the export of military and dual-use space and missile technologies. More importantly, the NSG accepted Brazil as a member in 1996. It marked a stunning turn of events, as Brazil was now recognized as a legitimate civilian exporter of nuclear technology by the same regime that had targeted it for decades with supply-side restrictions. Ambassador Santiago Mourão, who would later be Itamaraty’s Director for Disarmament and Sensitive Technologies, told me that NSG membership was “fundamental” for working-level Brazilian diplomats’ views on the NPT.<sup>293</sup> The institutions of the nonproliferation regime were now enhancing, rather than constraining, Brazil’s status. As my theory indicates, such a shift foreshadowed movement toward becoming an arms control advocate.

Cardoso also inherited from Franco the ongoing (1993–1996) CTBT negotiations at the CD in Geneva. Since Brazil had abandoned its attachment to PNEs under Collor, supporting the CTBT came naturally. Diplomats serving under Lampreia attempted to make the test ban regime as strict as possible while also protecting Brazilian sovereignty.<sup>294</sup> First, Brazil advocated for a range of policies

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<sup>293</sup> Author interview with Mourão, 2019.

<sup>294</sup> Lampreia would even personally take part in some of the negotiations. And for a Brazilian proposal on language related to the linkage of a test ban and nuclear disarmament that was not adopted see: CD/NTB/WP.328.

rejected by the P5: prohibiting computer simulations of tests, dismantling all former test sites, and opening such sites to international inspectors.<sup>295</sup> Second, Brazil initially fought against proposals for the eventual zero-yield standard of the treaty in favor of a 300-ton limit to avoid potential OSI that would disrupt its mining industry. Third, Brazil was an early supporter of entry-into-force language requiring ratification by 95-percent of states with nuclear reactors or research programs. The view was that this clause would prevent a single nuclear-armed state from having a veto over the treaty coming into effect (Ramaker et al. 2003; Johnson 2009).<sup>296</sup>

In the end, the CD accepted none of these proposals. Brazil is also one of the 44 “nuclear-capable” states in the CTBT’s Annex 2 that must ratify before the agreement may enter into force.<sup>297</sup> Annex 1 to the treaty’s protocol also lists five IMS stations in Brazil—three seismic and two radionuclide—that are all operational today and collecting data on nuclear explosions around the clock.<sup>298</sup> They continue to do so even though the treaty has not entered into force.

Cardoso signed the CTBT on September 24, 1996, the day it opened for signature. By doing so, he type signaled as a treaty advocate to the international community that Brazil did not seek to conduct nuclear weapon tests or the PNEs that his country’s officials had defended for decades. In an interview I conducted with the former president, Cardoso explained that it was only natural for him to sign

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<sup>295</sup> See: CD.PV/674.

<sup>296</sup> See also: CD/PV.674.

<sup>297</sup> See: CTBT, Annex 2.

<sup>298</sup> See: CTBT, Protocol, Annex 1; CTBTO, “CTBTO World Map,” updated as of March 9, 2021, <https://www.ctbto.org/map/>.

the treaty because Collor had already made Brazil's decision to forgo PNEs, and "the military never said that they were against this." To Cardoso, whatever reservations diplomats may have had about the specific parameters of the treaty, there was simply no point in raising eyebrows in the international community by not signing.<sup>299</sup> The National Congress would consider the commitment signaling of ratification as a corollary to the NPT.

In March 1997, Cardoso called a meeting with Lampreia and his top diplomats to consider the NPT (Patti 2012). Acceding to the treaty was not without its opponents. Most notable was Ambassador Ronaldo Mota Sardenberg, Cardoso's Secretary for Strategic Affairs. Cardoso's (2015) diaries from the presidency describe conversations with Sardenberg, who continued to view the NPT as a discriminatory institution that would diminish Brazilian status.<sup>300</sup> Regardless, the president decided that it was time to join the regime and leave behind Brazil's standing as a status dissenter.

Since the NPT had entered into force in 1970, Cardoso could no longer sign this multilateral arms control treaty per the provisions of its Article IX.<sup>301</sup> Participating in the NPT would have to occur through the joint signaling process of accession, where the motivations for both type and commitment signaling would need to be addressed. Cardoso pushed back against opponents of the treaty in

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<sup>299</sup> Author interview with Cardoso, 2019.

<sup>300</sup> Such debates continue with great frequency within the Brazilian academic and defense communities (Kassenova 2014; author interviews with Dalaqua, 2017; Ramalho, 2017; Viola, 2017; Dawood, 2019; Herz, 2019; Nascimento Plum, 2019; Patti, 2019; Spektor, 2019).

<sup>301</sup> See: NPT, Art. IX, para. 1.

his administration and the National Congress, paving the way for accession (Cardoso 2016; Burges and Bastos 2017). On July 2, 1998, Congress linked its approval of the NPT to a statement reaffirming the imperative of nuclear disarmament per its Article VI (Duarte 2016). There were some objectors in Congress, but with a popular president's support, the remaining steps were a formality. Three weeks later, Brazil ratified the CTBT on July 24 as part of its broader nuclear discussions. Accession to the NPT, the joint signal changing course after more than 30 years of opposition to the accord, followed on September 18. Brazil had already legally forsworn nuclear weapons through the Tlatelolco Treaty in 1994, but the NPT accession came with a greater degree of global recognition.

But much like the debate over exploration versus pursuit of nuclear weapons, there is some disagreement in the literature over the reasons for Brazil finally joining the NPT. Patti (2012) and Debs and Monteiro (2017) point to the mastery of the fuel cycle as the catalyzing event. The fuel cycle was, however, mastered more than a decade before the NPT decision. Graham (2002) and Goldemberg, Alvim, and Mafra (2018) attribute the event to democratization. Non-authoritarian leaders like Sarney, Collor, and Franco were skeptical of the NPT, though. Rublee (2010) gives some credit to the norms of the nonproliferation regime. Yet, Brazil fought against such norms for over three decades.

In my interview with the former president, Cardoso explained his NPT decision-making. He quickly dismissed ideas that he was a visionary leader,

distilling his thoughts down to two main lines of reasoning that conform to the logic of this dissertation's process-based theory of multilateral nuclear arms control.

First, Cardoso addressed how his government overcame Brazil's status dissenter objections to the treaty. He immediately pointed to the changing nature of the NPT in the face of Iraq and North Korea. That is, the treaty the Brazilians fought against in the 1960s had evolved and was now more universal. The former president explained:

In supporting the [NPT], my motivation, I will preserve the national interest by not producing the bomb. [...] In my conception, our international influence will be better and we will be capable of being the leaders in South America. Being a leader in South America has some power in the world.<sup>302</sup>

The world had evolved. While opposing the treaty might have brought about status benefits during the Cold War, it had morphed into a liability for Brazil. Cardoso's (2015) diaries even indicate that at one point he believed that acceding to the NPT might position Brazil to eventually obtain a permanent seat on the UNSC. Such explanations seem in line with Rublee's (2010) normative argument, but the motivations were self-serving for Brazil rather than moral. It seems likely that fuel cycle mastery also contributed to status-based reasons to join the NPT, as Brazil would face greater scrutiny as an advanced nuclear state outside of the treaty than would a country with limited or no capability.

Second, Cardoso discussed regional security, which relates to commitment signaling, the other component of joint signaling in the theory.

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<sup>302</sup> Author interview with Cardoso, 2019.

Cardoso indicated that fuel cycle mastery, as argued by Patti (2012) and Debs and Monteiro (2017), was essential to his decision-making. However, he offered a surprising connection to nuclear latency and hedging:

There are no Brazilian enemies in the area with an atomic bomb, so why should we have one? It would just provoke competition. At the same time, it is necessary to have the competency. In my mind, in the balance between loss and gains, we will have more losses than gains if we are outside the nuclear treaty, assuming we had the competence. [...] I have from time to time heard some people saying it was a mistake to sign the Nonproliferation Treaty. Of course, it is always possible for us to go nuclear—we have the knowledge.<sup>303</sup>

As the theory predicts, countries will not provide a commitment signal to legally forswear nuclear weapons if they lack credible protection against a serious security threat. Cardoso is clear in pointing out that Brazil faced no such threats in 1998. His discussion of nuclear hedging is interesting because it implies that accession offered another security benefit. That is, Cardoso explained that being one of the NPT States Parties in good standing means that a country does not face a harsh spotlight and nonproliferation pressure. Essentially, being a member of the NPT may make it *easier* to hedge toward the bomb in the event of a political decision to do so. Spektor (2016) confirms that Cardoso tried to revive the civilian nuclear program, although financial constraints prevented him from doing so at a meaningful level. Cardoso also noted that Argentina joining the regime in 1995

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<sup>303</sup> Author interview with Cardoso, 2019.



during this same period was important, as it signaled peaceful nuclear intentions from a former rival state.<sup>304</sup>

The reasons why countries join treaties are rarely monocausal. This dissertation has shown that by frequently pointing to differential motivations underlying treaty signature and ratification. In the case of Brazil, the joint signaling of accession required simultaneous satisfaction of both sets of conditions. Democratic regime type may have eased the process of transparency between Brazil and Argentina, but it does not appear to be a prerequisite for NPT accession. Likewise, with some slight adaptations, both the fuel cycle mastery and norms arguments map onto parts of the Brazilian story. Neither is independently sufficient to explain the joint signaling that occurred in 1998. Instead, it is useful to think of treaty decision-making within the dissertation's theoretical process-based signaling framework, which incorporates both variables.

### Conclusion

Brazil's journey in nuclear diplomacy did not end in 1998. Since then, Brasília has become an active participant and sometimes leader at NPT Review Conferences. The state is a member of the pro-disarmament New Agenda Coalition (NAC) and has even attempted to mediate between Iran and the United States on nuclear issues. Still, statements and actions by Presidents Luiz Inácio Lula da Silva, Dilma Rousseff, and Jair Bolsonaro have raised occasional suspicions about Brazil's nuclear intentions (Herz, Dawood, and Lage 2016; Spektor, Kassenova, and

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<sup>304</sup> This point corresponds with Sagan's (2011) observation that regional rivals may often wait for one another before joining the NPT.

Florentino 2019). Brazil has refused to sign an Additional Protocol with the IAEA since the late 1990s, chastising the arrangement as an infringement on national sovereignty. The navy continues to develop a nuclear-powered submarine, which poses unique safeguards challenges since Brazil is an NNWS. These concerns aside, Brazil remains solidly on its peaceful nuclear course and is a significant player in the multilateral nuclear arms control arena, given its historical experience.

Extant literature has either labeled Brazil as an attempted proliferator without compelling evidence or inadvertently oversimplified its nuclear history. Common explanations of the Brazil case contend that the state sought nuclear weapons under a military dictatorship before abandoning such aspirations due to democratization. The evidence presented here suggests that neither of these statements is accurate. More nuanced narratives rightly reject these points, offering more persuasive but incomplete accounts. Accordingly, this chapter provided analysis of historical documents and original elite interviews to shed new light on Brazilian decision-making in the nuclear domain. It showed that mastery of uranium enrichment and the evolution of the NPT were both necessary conditions to prompt joint signaling reversing decades of opposition to the treaty. They did so by eliminating any status or security concerns that might have prevented Brazil from acceding. While scholars have indeed discussed each of these arguments, the dissertation offers a process-based theoretical framework inclusive of both. In doing so, it attempts to capture the historical richness of the case as well as a basis for broader generalizability.

Brazil was a status dissenter during the NPT negotiations and in the decades following its refusal to sign the treaty in 1968. Its leaders viewed the treaty as discriminatory and aimed at keeping technologies for modernization out of the hands of developing states. International and U.S. nonproliferation pressure only intensified motivations for acquiring such capabilities. Those counterproductive supply-side measures were a part of a long journey that did not see Brazil accede to the treaty until 1998 in close proximity to related developments. These events included Brazil joining the Tlatelolco Treaty, CTBT, NSG, and MTCR alongside its regional rival Argentina. When Brazil finally entered the NPT, the treaty had evolved. Type signaling as a status dissenter had become a liability to Brazil's role on the global stage rather than an asset. Further, Brazil had no serious regional security threats to prevent commitment signaling and would benefit from the NPT legitimizing its nuclear latency. The joint signaling of accession was now possible, as Brazil finally turned the page on its troubled history with the treaty.

## Chapter 6 – Japan: Nuclear Futures, Taboos, and Alliance Politics

Much of the nuclear history of Japan focuses on the attacks on Hiroshima and Nagasaki and their consequences for Japanese strategic culture and society. The resultant narrative is frequently that of transformation into a peace state and vocal proponent of international nuclear disarmament (Tanaka 1970; Akimoto 2020). However, nuclear politics in Japan are more complex than any single narrative would suggest. Since the end of the Second World War, Japan has also repeatedly requested—and obtained—robust U.S. nuclear security assurances and studied the possibility of developing its own nuclear arsenal (Kase 2001; Debs and Monteiro 2017; Akiyama 2018). Tokyo's reliance on the nuclear umbrella and efforts to promote disarmament at home and abroad have produced a dynamic Masakatsu Ota (2018, p. 94) refers to as the “*Nuclear Kabuki Play*.”

Nowhere is this phenomenon more evident than in the case of the NPT. Prime Minister Eisaku Satō, leader of the only state to suffer an atomic bombing, refused to sign the treaty when it opened for signature on July 1, 1968. Japan was thus not an early advocate of legally forswearing nuclear weapons. As discussed in my typology in Table 3 of Chapter 2, advocates endorse the balance of power codified by a treaty and view the agreement as a long-term benefit to the state. Satō would wait until February 3, 1970, to sign the NPT and signal Japan's state type as an advocate. Yet, he was not immediately supportive of ratification by the Japanese Diet and did not submit the treaty for consideration by the body. The firmer commitment signal of ratification would finally occur on June 8, 1976, under the Prime Ministership of Takeo Miki. This lengthy delay in renouncing

nuclear weapons transpired even as Washington urged its protégé to embrace the accord. But why did Japan take so long to accept the NPT?

The extant literature is somewhat divided over how to explain Japanese behavior in the NPT context. While there is little scholarly analysis of Tokyo's decision to sign the treaty, there are several existing explanations for its slow ratification. Quester (1970) and, later, Paul (2000) contend that such delays were caused by Japan's commercial imperative to negotiate a favorable nuclear safeguards agreement with the IAEA. Solingen (2007) primarily attributes the delays to domestic politics in Japan. Akiyama (2018) and Abe (2020) argue that the Japanese inability to decide whether to foreclose the nuclear option was pivotal. After all, championing the NPT would be tantamount to Japan legally forswearing nuclear weapons when China was carrying out thermonuclear tests and developing ballistic missiles.

This chapter introduces declassified internal Japanese documents and diplomatic correspondence that show the determinative impact of security in Tokyo's NPT decision-making. I find that Satō's delay in signing was due to Japan initially being a weapons dissenter in my typology, as opposed to an advocate. Weapons dissenters have difficulty embracing the treaty's balance of power and view independent nuclear weapons programs as a realistic means of security. It took time for the Japanese government to accept in principle its non-nuclear status. Only when national ambitions had evolved concerning the treaty could Tokyo type signal as an advocate. Meanwhile, Japan conducted several studies to assess the viability of an autonomous nuclear weapons program. It also mastered the civilian

nuclear fuel cycle in a way that would enable it to develop a plutonium-based bomb quickly should emergency circumstances ever arise.

The evidence supports my theory that ratification decisions revolve around security. Existing explanations pertaining to safeguards and domestic politics issues mattered in the Japanese context, but the security narrative is significantly more persuasive. As my theory of multilateral nuclear arms control spells out, signature and ratification are actions of different magnitude. The existing literature's focus on ratification in the Japanese case overlooks much of the complexity of Tokyo's signaling. While Japan had said "No" to nuclear weapons by eventually signaling its type as an advocate in 1970, its leaders needed until 1976 to say "Never" with a firmer commitment signal. Ratification did not occur until Japan had received robust U.S. security assurances and thoroughly studied and ruled out building the bomb.

**Figure 7:** Timeline of Japanese NPT and CTBT Diplomacy



The timeline shown in Figure 7 offers further support for my argument by comparing Japan's signaling on the NPT to the CTBT. Japan had already legally forsworn nuclear weapons and obtained iron-clad U.S. nuclear umbrella guarantees. Its participation in the CTBT of 1996 was nearly a foregone

conclusion. Prime Minister Ryūtarō Hashimoto signed the CTBT on September 24, 1996, the day it opened for signature. Ratification by the Diet took place relatively quickly afterward on July 8, 1997.

This chapter explores Japan's complicated multilateral nuclear arms control journey in five sections. First, I analyze Japanese interest in the atom and alliance politics after Hiroshima and Nagasaki to provide context for the NPT discussions. Second, I provide evidence showing deep Japanese skepticism of the treaty during its negotiation. Third, I assess reasons why Japan delayed its signing and ratification of the NPT. Fourth, I discuss Japan's post-NPT nuclear politics, including the negotiation, signing, and ratification of the CTBT. Finally, I briefly review the evidence and conclude the chapter.

### Nuclear Politics After Hiroshima and Nagasaki

Japanese nuclear history began before the U.S. atomic bombings in August 1945. During the Second World War, the military government under General Hideki Tōjō authorized two initiatives to build the bomb and win the war in the Pacific Theater. They were the army's Ni-Go project under physicist Yoshio Nishina and the navy's F-Go project led by his contemporary Bunsaku Arakatsu. A range of uranium enrichment methods was explored from 1941–1945, including gaseous diffusion, gas centrifuge development, and electromagnetic separation. Yet, neither Ni-Go nor F-go was successful due to a lack of resources (Yamazaki 2001; Akiyama 2018). The reason was that both projects were considered relatively low priorities compared to other elements of the war effort (Campbell and Sunohara 2004). Japan has not had a technical program to actively pursue nuclear weapons since

their termination (Singh and Way 2004; Jo and Gartzke 2007; Bleek 2017). Nevertheless, this section provides evidence of early thinking about security issues and potential nuclearization among democratic leaders in post-war Japan. Such considerations would later present challenges to Japan legally forswearing nuclear arms in spite of the country's experience with the deadly effects of these weapons.

The attacks on Hiroshima and Nagasaki shaped Japanese security policy and cultural norms regarding the atom. Though the number of casualties remains unknown, up to 210,000 Japanese may have perished due to blast and fire damage and lingering effects of radioactive fallout (Tomonaga 2019).<sup>305</sup> While Imperial Japan had briefly pursued the bomb, post-war Japanese leaders would continuously confront a taboo, or “allergy,” against the possession or use of these weapons among the public and many Diet members (Tanaka 1970; Mochizuki 2007; Rublee 2009). An activist community led by the *Hibakusha*—survivors of the bombings—would also emerge to continually reinforce the powerful anti-nuclear norm (Baron, Gibbons, and Herzog 2020; Thurlow 2020). Japanese nuclear history thus became a story of conflicting pressures: the imperative to protect the nation versus a pronounced aversion to nuclear weapons. Strong interest in civilian nuclear energy would eventually also present the dual-use dilemma.

The U.S.-led allied occupation of Japan began after Tokyo's surrender on September 2, 1945, and lasted until 1952.<sup>306</sup> On May 3, 1947, the new pacifist Japanese constitution took effect with its Article IX indicating, “The

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<sup>305</sup> For a discussion of nuclear weapon effects see: Glasstone and Dolan 1977; Eden 2004.

<sup>306</sup> For informative historical accounts of the occupation see: Schaller 1985; Sugita 2003.



Japanese people forever renounce war as a sovereign right of the nation.”<sup>307</sup> Debs and Monteiro (2017, p. 361) note that this was done so that “Japan could reassure foreign countries of its peaceful intentions.” Japan continued to appear as a likely advocate of banning military nuclear weapons, making its future resistance to the NPT seem surprising.

Despite Article IX of the constitution and the Japanese nuclear “allergy,” General Douglas MacArthur, the Supreme Commander for the Allied Powers (SCAP), issued guidance to restrict Japan’s atomic research. SCAP constraints limited Japan to peaceful uses of nuclear energy and prohibited isotope separation except in “minute quantities to be used for research purposes only.”<sup>308</sup> Meanwhile, the U.S. AEC heavily surveilled any activities with radioactive materials and established export controls to prevent atomic transactions between Japan and the communist countries.<sup>309</sup>

Even though the Harry Truman administration would not permit nuclear autonomy, the SCAP sought some level of Japanese rearmament. MacArthur viewed Japan as a key actor in East Asia to prevent the spread of communism, particularly in the lead-up to the Korean War in June 1950. He advocated for a Japan that could defend itself, which he interpreted as compatible

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<sup>307</sup> See: Constitution of Japan (November 3, 1946), Art. IX, [https://japan.kantei.go.jp/constitution\\_and\\_government\\_of\\_japan/constitution\\_e.html](https://japan.kantei.go.jp/constitution_and_government_of_japan/constitution_e.html).

<sup>308</sup> See: “Memorandum by the Assistant Secretary of State (Hilldring) to the United States Member of the Far Eastern Commission (McCoy),” Washington, DC, August 6, 1946, in *FRUS*, 1946, Vol. VIII, *The Far East*, Doc. 231; “The Secretary of State to the Acting Political Adviser in Japan (Bishop),” Tokyo, February 4, 1947, in *FRUS*, 1947, Vol. VI, *The Far East*, Doc. 181.

<sup>309</sup> See: “The Secretary of State to Certain Diplomatic Missions Abroad,” Washington, DC, August 16, 1948, in *FRUS*, 1948, Vol. I, Part II, *General; The United Nations*, Doc. 92.

with Article IX (van Sant, Mauch, and Sugita 2007). This line of reasoning from the Americans sometimes led to tensions with Japanese Prime Minister Shigeru Yoshida, a skeptic of rearmament (Buckley 1985). Yoshida pursued the now eponymous Yoshida Doctrine that called for Japan to rebuild its economy after the war while relying on the United States for its national defense.

The signing of the San Francisco Peace Treaty and the U.S.–Japan Mutual Security Treaty in 1951 further entrenched Tokyo’s dependence on Washington.<sup>310</sup> While the U.S. occupation would end the following year, the security relationship continued. The peace reached with the Allied Powers effectively disarmed Japan, so Article I of the Mutual Security Treaty was an agreement between the parties “to dispose United States land, air and sea forces in and about Japan.” The treaty did commit Japan to take greater responsibility for its defense on an unspecified timeline. Still, the United States maintained sovereign control over the Bonin and Ryukyu Islands (including Okinawa).

Providing security for Japan created internal tensions in the U.S. government in the nuclear domain. The State Department had an early understanding of the prevalence of the nuclear taboo in Japan and would not allow the JCS to deploy nuclear weapons on the Japanese mainland. This was the case even before the conclusion of the Korean War in July 1953. Consequently, “Strategic Air Command stationed planes at bases on the main islands, but kept the nuclear components of their weapons at bases outside Japanese jurisdiction,

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<sup>310</sup> For the text of these agreements see: Treaty of Peace with Japan (September 8, 1951), *TIAS* 2490, 136 *UNTS* 45, 3 *UST* 3169; Security Treaty Between the United States and Japan (September 8, 1951), *TIAS* 2491, 3 *UST* 3329–3340.

primarily in Okinawa and Guam (Gallicio 2001, p. 122).” And in October 1953, the navy sent the nuclear-equipped USS *Oriskany* carrier battle group to patrol the Sea of Japan and the East China Sea (Ota 2018). Such efforts were part of a pattern of increasing Japanese military and economic dependence on the United States.<sup>311</sup> This reliance only grew as the Soviet Union used its veto at the UNSC to prevent Japan from joining the UN.<sup>312</sup> The Japanese government required constant reminders of U.S. protection.

And although nuclear weapons remained a delicate issue in the alliance, President Dwight Eisenhower’s December 1953 Atoms for Peace speech opened the door to commercial civilian nuclear cooperation. The speech was part of a U.S. push in “distinguishing the ‘peaceful atom’ from the weapons used in Hiroshima, Nagasaki, and the Cold War arms race with the Soviet Union (Baron and Herzog 2020, p. 2).” Before the initiative, such transactions were limited to Japan’s receipt of small quantities of medical radioisotopes through the SCAP for research purposes.<sup>313</sup> Nuclear power made a great deal of sense for Japan given fuel shortages, limited natural resources, and high energy consumption per capita.<sup>314</sup> Yoshida’s government soon began negotiating the terms of civilian

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<sup>311</sup> See: “National Intelligence Estimate, NIE-99,” Washington, DC, October 23, 1953, in *FRUS*, 1952–1954, Vol. II, Part I, *National Security Affairs*, Doc. 97.

<sup>312</sup> See: “Press Release No. 19 Issued by the Department of State, January 18, 1954,” January 18, 1954, in *FRUS*, 1952–1954, Vol. III, *United Nations Affairs*, Doc. 46.

<sup>313</sup> See: “Summary Log of Atomic Energy Work in the Office of the Under Secretary of State, February 1, 1949–January 31, 1950,” Washington, DC, n.d., in *FRUS*, 1949, Vol. I, *National Security Affairs, Foreign Economic Policy*, Doc. 228.

<sup>314</sup> See: “National Security Council Report,” Washington, DC, August 13, 1954, in *FRUS*, 1952–1954, Vol. II, Part II, *National Security Affairs*, Doc. 238.

nuclear cooperation with Washington. In March 1954, the government authorized funds for researching nuclear reactors (Iwama 2019).

But that same month, the *Lucky Dragon* incident presented a setback to Japan's nuclear energy aspirations and the provision of the U.S. nuclear umbrella. The detonation of a 15-megaton U.S. thermonuclear device, codenamed *Castle Bravo*, at Bikini Atoll in the Marshall Islands led to radiation poisoning of Japanese fishers on the *Daigo Fukuryū Maru* vessel (*F/V Lucky Dragon 5*) some 85 miles away (Soling 2007; Kusunoki 2008). Their illnesses and the eventual death of one fisher led to disagreements over compensation between Japan and the United States.<sup>315</sup> Both houses of the Japanese Diet then unanimously passed resolutions calling for the international control of nuclear energy under UN auspices (Kurosaki 2019). The resolutions did not specifically call for a ban on nuclear explosive tests, thereby avoiding further confrontation with Washington. However, U.S. Ambassador John Moore Allison categorically rejected the idea of deploying nuclear weapons to mainland Japan in the incident's aftermath (Ota 2018). The idea that Japan might one day consider developing its own nuclear weapons seemed an unlikely possibility at the time.

Yet, tensions over the *Lucky Dragon* incident coincided with U.S. doubts over Tokyo's reliability as an ally. In June 1954, the NSC warned that as Soviet influence grew, "The long-term alignment of Japan with the free world is

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<sup>315</sup> See: "Memorandum by the Acting Secretary of State to the President," Washington, DC, May 29, 1954, in *FRUS*, 1952–1954, Vol. XIV, Part II, *China and Japan*, Doc. 763; "Memorandum by the Acting Assistant Secretary of State for Far Eastern Affairs (Drumright) to the Secretary of State," Washington, DC, June 3, 1954, in *FRUS*, Vol. XIV, Part II, Doc. 765.

less certain.”<sup>316</sup> Two months later, Ambassador Allison told Secretary of State John Foster Dulles that Japan might opt for neutrality to avoid entrapment in a U.S.–Soviet nuclear confrontation.<sup>317</sup> These conclusions came even as Japan was the second-largest recipient of U.S. military aid in Asia after Taiwan’s Kuomintang government.<sup>318</sup> In retrospect, the assessments are somewhat surprising given the security reliance on Washington envisioned by the Yoshida Doctrine.

Ichirō Hatoyama rose to power to replace Yoshida in December 1954. A nationalist, he had been set to be prime minister in 1946 before the SCAP barred him from politics for over five years for suspected ties to the former military regime (Itoh 2003). When his conservative Japan Democratic Party merged with the Liberal Party in November 1955, Hatoyama became the first leader of the Liberal Democratic Party (LDP). He repaired ties with the USSR and pursued revision of the constitution to permit Japan to build a military. The former enabled Japan to join the UN in 1956 after the Soviets dropped their veto. Public opinion and budgetary constraints prevented Hatoyama from accomplishing rearmament (Kusunoki 2008).

Facing opposition to his rearmament plans, Hatoyama fell into line with Eisenhower’s designs for Japan in order to protect the nation. He acquiesced to the American announcement in January 1955 that the occupation of Okinawa

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<sup>316</sup> See: “Study Prepared by the National Security Council Planning Board,” Washington, DC, June 14, 1954, in *FRUS*, 1952–1954, Vol. II, Part I, *National Security Affairs*, Doc. 117.

<sup>317</sup> See: “Memorandum by the Ambassador in Japan (Allison) to the Secretary of State,” Tokyo, September 9, 1954, in *FRUS*, 1952–1954, Vol. XIV, Part II, *China and Japan*, Doc. 798.

<sup>318</sup> See: “Note to the National Security Council by the Executive Secretary (Lay),” in *FRUS*, 1952–1954, Vol. XII, Part I, *East Asia and the Pacific*, Doc. 312.

would continue indefinitely (van Sant, Mauch, and Sugita 2007). And in March of that year, Hatoyama told reporters that Japan should allow storage of U.S. tactical nuclear weapons (TNWs) on its territory (Ota 2018). Such deployments were one of the linchpins of the U.S. “New Look” policy and the massive retaliation strategy. Hatoyama’s statements outraged Communists and Socialists in the Diet as well as the public-at-large. The backlash forced him to quickly retract his comments in a speech to the Upper House of the Diet on March 29, 1955:

There is no necessity to store nuclear weapons in Japan, because the US military equips its naval vessels with nuclear weapons [...] without storing nuclear weapons on Japanese land, we can maintain peace through strength with the US possession of nuclear weapons, I believe (qtd. in Ota 2018, p. 198).

While Hatoyama ruled out TNW deployments in mainland Japan, the U.S. bases remained. They were not without their critics in the Diet, however, as a sizable portion of Japanese elites believed they unjustly made Japan a nuclear target.<sup>319</sup>

Although military nuclear issues remained contentious, the Hatoyama administration made progress on civilian nuclear energy following the lifting of several SCAP restrictions (Akiyama 2018). Tokyo and Washington signed the Agreement for Cooperation Concerning the Civil Use of Atomic Energy in 1955 (Iwama 2019). According to the agreement’s details, the United States would provide Japan with reactor technology and would lease it fuel for any reactors that

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<sup>319</sup> “National Security Council Report,” Washington, April 9, 1955, in *FRUS*, 1955–1957, Vol. XXIII, Part I, *Japan*, Doc. 28.

were built.<sup>320</sup> The Diet also passed the Atomic Energy Basic Act in 1955, which established guidelines for research on nuclear reactors and fuel. The Atomic Energy Basic Act prohibited non-peaceful nuclear activities (Solingen 2007). It led to the establishment of the Japan Atomic Energy Commission (JAEC), the Japanese Nuclear Safety Commission, and the Japan Atomic Energy Research Institute (JAERI) (JAEC 1958).<sup>321</sup> Under Hatoyama, Japan had begun to develop the institutional infrastructure to support a major nuclear energy program.

After the short tenure of Hatoyama's like-minded successor, Tanzan Ishibashi, Nobusuke Kishi became the next prime minister in January 1957. Kishi aggressively sought to revise the constitution to rearm Japan, even voicing support for developing an autonomous nuclear arsenal (Hoey 2017). He told a Diet committee: "I do not think so-called nuclear weapons are prohibited entirely by constitution. In view of progress of science, we must have effective power to carry out modern warfare within scope self-defense [sic]."<sup>322</sup> Given Japan's new interest in nuclear energy and doubts about its trajectory as an ally, Kishi's statements

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<sup>320</sup> For the text of the agreement see: Agreement for Cooperation Between the Government of Japan and the Government of the United States of America Concerning Civil Uses of Atomic Energy (November 14, 1955), <http://www.aec.go.jp/jicst/NC/about/ugoki/geppou/V03/N06/195804V03N06.HTML>.

<sup>321</sup> For a declassified South Korean government assessment of the Japanese plans at the time see: "Political Report, Minister Yong Shik Kim [Kim Yong-shik] to the Office of the President," December 15, 1955, History and Public Policy Program Digital Archive, Doc. 123709, B-308-016, The Korean Diplomatic Mission in Japan, Reports from the Korean Mission to the United Nations and Republic of Korea Embassies and Legations, Syngman Rhee Institute, Yonsei University. And for a brief discussion of the JAEC's early operations see: Takubo 2008.

<sup>322</sup> Qtd. in "Telegram From the Embassy in Japan to the Department of State," Tokyo, May 8, 1957, in *FRUS*, 1955–1957, Vol. XXIII, Part I, *Japan*, Doc. 132. See also: "National Security Council Report," Washington, DC, June 11, 1960, in *FRUS*, 1958–1960, Vol. XVIII, *Japan; Korea*, Doc. 175.

about proliferation triggered alarm bells in Washington. Documents from the time reveal that the Eisenhower administration was already afraid that Japan and West Germany might go nuclear if France did so.<sup>323</sup>

But like his predecessors, Kishi was forced to backtrack on his statements in the face of U.S., Japanese public, and Diet pressure. He reassured the Americans of “Japan’s dependence on the U.S. nuclear deterrent to prevent general war.”<sup>324</sup> However, this decision was not without complication. Leaks about possible U.S. nuclear bases on the mainland stoked anger in Japan,<sup>325</sup> and both houses of the Diet passed resolutions calling for an end to nuclear testing (Kurosaki 2019).<sup>326</sup> Kishi was thus compelled to inform the Diet that nuclear proliferation was incompatible with the constitution and rejected the U.S. bases (Kusunoki 2008). Further, he attempted without success to win support from Eisenhower for a one-year moratorium on nuclear tests.<sup>327</sup> Behind the scenes, Saburo Ohta, the Japanese Ambassador to Poland, told Polish officials that Japan

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<sup>323</sup> See: “Memorandum From the President’s Special Assistant (Stassen) to the President,” Washington, DC, June 29, 1956, in *FRUS*, 1955–1957, Vol. XX, *Regulation of Armaments; Atomic Energy*, Doc. 143. For further discussion of U.S. fears of Japanese proliferation under conservative governments see: Kase 2001.

<sup>324</sup> See: “Letter From the Ambassador in Japan (MacArthur) to the Secretary of State,” Tokyo, May 25, 1957, in *FRUS*, 1955–1957, Vol. XXIII, Part I, *Japan*, Doc. 159.

<sup>325</sup> See: “Telegram From the Embassy in Japan to the Department of State,” Tokyo, January 26, 1957, in *FRUS*, 1955–1957, Vol. XXIII, Part I, *Japan*, Doc. 114.

<sup>326</sup> The latter move followed a joint Japan–Canada–Norway resolution introduced to the First Committee of the UNGA in the days before Kishi assumed office. It called for all nuclear explosive tests to be registered with the UN in advance “to [keep] the total actual and expected radiation in the world under constant observation.” [See: A/C.1/L.162 and A/C.1/L.162.Rev.1].

<sup>327</sup> See: “National Intelligence Estimate, NIE 4-63,” Washington, DC, June 28, 1963, in *FRUS*, 1961–1963, Vol. VII, *Arms Control and Disarmament*, Doc. 301.



supported the Rapacki Plan's idea for a Central European NWFZ. Ohta explained that such principles were essential to keeping the superpowers' nuclear weapons out of their allies' sovereign territory.<sup>328</sup>

Still, the civilian nuclear energy program was seen as a separate entity and made further strides under Kishi. The JAEC's first research reactors using U.S. technology and fuel, JRR-1 and JRR-2, would come online in 1957 and 1960, respectively (Yamashita 2015). Initial IAEA safeguards monitoring in Japan would begin in 1957 as well (Campbell and Sunohara 2004). And the earlier lifting of SCAP restrictions provided the basis for a 1958 agreement with Britain and the import of a graphite-moderated Magnox reactor running on natural uranium (Iwama 2019). The reactor at Tokai-mura would first connect to the power grid in 1966, but it also began the process of Japan accumulating plutonium that could be used to produce a nuclear weapon. The lack of evidence surrounding any nuclear weapons hedging plans has led Iwama (2019, p. 153) to label ulterior military motivations as "academically unproven." Yet, as I show later in this section, the pursuit of nuclear latency was actually present in Japanese defense planning before the Magnox reactor went critical.

Regardless of public opposition, Kishi continued to push for changes in the relationship with the United States. In June 1958, Foreign Minister Aichirō Fujiyama told the Americans Japan was prepared to negotiate a revised security treaty, including provisions for consultation regarding deployment of U.S. nuclear

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<sup>328</sup> See: "Deputy Minister Winiewicz, 'Record of Conversation with the Ambassador of Japan on the 13th of this Month,'" January 18, 1958, History and Public Policy Program Digital Archive, Doc. 208949, *Polskie Dokumenty Dyplomatyczne 1958* (Warszawa: Polski Instytut Spraw Międzynarodowych, 2011), Doc. 29, 64–65. Trans. Jerzy Giebułtowski.

forces (Debs and Monteiro 2017).<sup>329</sup> This would mark a change from the 1952 treaty, which codified a one-sided defense relationship favoring Washington. A year later, the Eisenhower administration briefly considered—but rejected—providing Japan with classified design information to build its own nuclear weapons.<sup>330</sup> The new treaty was signed in Washington on January 19, 1960.<sup>331</sup> It created the system of “prior consultation” before U.S. nuclear weapons could be deployed in Japan or U.S. forces could launch military operations from Japanese territory (Ota 2018, p. 199). In secret, the Eisenhower and Kishi governments agreed that many U.S. military activities, including transit of nuclear weapons through Japanese ports, would not be governed by the treaty (Ota 2013, 2018; Shinobu 2014). Okinawa also remained outside the treaty’s scope.

Even though the treaty provided Kishi with face-saving language about preserving Japan’s autonomy, it was not without its critics. As Hoey (2017, p. 164) explains, “Kishi’s efforts to force ratification of the revised treaty through the Diet resulted in massive protests and his early resignation in 1960.” His successor, Hayato Ikeda, was anything but a hawkish nationalist. Yet, even Ikeda expressed some level of interest in nuclear weapons “to reduce Japan’s defense budget (Green and Furukawa 2008, p. 349).” Japanese leaders were now

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<sup>329</sup> For early text from the draft treaty see: “Memorandum From the Assistant Secretary of State for Far Eastern Affairs (Robertson) to Secretary of State Dulles,” Washington, DC, March 22, 1958, in *FRUS*, 1958–1960, Vol. XVIII, *Japan; Korea*, Doc. 5.

<sup>330</sup> See: “Memorandum of Discussion at the 415th Meeting of the National Security Council,” Washington, DC, July 30, 1959, in *FRUS*, 1958–1960, Vol. III, *National Security Policy; Arms Control and Disarmament*, Doc. 69.

<sup>331</sup> For the text of the treaty see: Treaty of Mutual Cooperation and Security Between the United States and Japan (January 19, 1960), 11 *UST* 1632, *TIAS* 4509.

seriously pondering the nuclear option, setting the stage for a complicated trajectory with multilateral nuclear arms control.

Due to its sensitivity, consideration of developing nuclear weapons took place in the Ikeda administration outside of public, media, and Diet view. Prominent Japanese scholars and strategists, however, were advising LDP politicians against proliferation in the early 1960s. In their view, extended deterrence would provide a better defense for Japan (Kusunoki 2008). It appears that the John F. Kennedy administration was not seriously concerned about Japanese nuclearization. A National Intelligence Estimate from September 1961 concluded that Tokyo was “5–6 years after decision” from building its first bomb.<sup>332</sup> The key phrase was “after decision,” as the document notes, “It is highly unlikely, however, that Japan at this time has any serious intentions of undertaking a nuclear weapons program of its own.”<sup>333</sup> Doubts about Japan’s willingness to proliferate were likely fueled by its pushing for a global nuclear test moratorium, which often pitted Tokyo against Washington at the UN (Kurosaki 2019).

China’s first nuclear test on October 16, 1964, dramatically altered Japanese threat perception. Ikeda had met with Presidents Kennedy and Johnson in the years before the test specifically to reaffirm the bilateral security

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<sup>332</sup> See: “National Intelligence Estimate, NIE 4-3-61,” September 21, 1961, in *FRUS*, 1961–1963, Vols. VII, VIII, IX, *Arms Control; National Security Policy; Foreign Economic Policy*, Microfiche Supplement, Doc. 243.

<sup>333</sup> Likewise, the U.S. intelligence community assessed in June 1963 that Japan could develop an air-delivered nuclear capability by 1970 but was unlikely to do so. See: “National Intelligence Estimate NIE 4-63, ‘Likelihood and Consequences of a Proliferation of Nuclear Weapons Systems,’” June 23, 1963, History and Public Policy Program Digital Archive, Doc. 115992.

relationship.<sup>334</sup> And the U.S. State Department assessed that a Chinese nuclear detonation would have only limited effects on Japanese foreign policy.<sup>335</sup> Perhaps the Americans overestimated Japanese faith in the credibility of U.S. protection. Shortly after the test, Eisaku Satō, who would later describe China as a “madman with a knife,” was elected prime minister (qtd. in Ota 2018, p. 200n20). Satō’s cabinet ordered a study in December 1964 that called for Japan to achieve nuclear latency “by way of investing in satellite and missile technology and nuclear power plants (Lanoszka 2014, p. 205).” The Magnox reactor at Tokai-mura would assist in these pursuits by generating plutonium byproducts. Simultaneously, the prime minister aggressively sought a firm U.S. security commitment to defend Japan against China (Ota 2018).

The Chinese test stirred great controversy among Japanese strategists. Some feared entrapment in a U.S.–PRC conflict, while others believed the eventual development of a Chinese intercontinental ballistic missile (ICBM) would erode the credibility of U.S. extended deterrence (Kase 2001; Yoshida 2019). Policy recommendations ranged from a declaration of neutrality, to indigenous proliferation, to a closer relationship with Washington. Satō concluded that the “Japanese public is not ready for” proliferation (qtd. in Kase 2001, p. 57),

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<sup>334</sup> See: “Memorandum of Conversation,” Washington, DC, June 20, 1961, in *FRUS*, 1961–1963, Vol. XXII, *Northeast Asia*, Doc. 330; “Memorandum of Conversation,” Washington, DC, November 25, 1963, in *FRUS*, Vol. XXII, Doc. 385.

<sup>335</sup> See: “Research Memorandum RFE-44 from Roger Hilsman to Acting Secretary, ‘Japan’s Reaction to a Chinese Communist Nuclear Detonation,’” October 1, 1962, History and Public Policy Program Digital Archive, Doc. 134049, RG 59, Entry UD-UP 131, INR/DDR, Bureau of Intelligence and Research, Reports Coordination and Review Staff, Research Memoranda 1961–1963, box 132, RFE-44-RM.

so he “seemed content with a restatement of US assurances (Debs and Monteiro 2017, p. 365).”

The Japanese leader traveled to Washington in January 1965 for meetings with President Johnson. According to records of the conversations, Satō “said that although he could see why it might be argued that if China has nuclear weapons, Japan should also, this was not Japan’s policy.”<sup>336</sup> For his part, Johnson provided the first firm guarantee of the nuclear umbrella (Ota 2018), stating that “if Japan needs our nuclear deterrent for its defense, the United States would stand by its commitments and provide that defense.” He further reiterated that “Japan need not give even a second thought to the dependability of its American ally.”<sup>337</sup> The joint communiqué released after their meeting identified China as a threat and emphasized that the United States would protect Japan (Nakatani 2019).

As the ENDC negotiations on the NPT began in Geneva in 1965, Japan faced a dynamic and challenging security environment. A potentially existential threat had emerged in the form of China’s nuclear program. But given Japan’s complicated history with nuclear weapons, nuclearization was simply not viable among the public or the Diet. Tokyo did have plans underway to develop a latent nuclear capability alongside a nuclear security guarantee from Washington. Choosing to remain in nuclear forbearance at a given time was much simpler than joining a multilateral nuclear arms control treaty that would force Japan to legally

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<sup>336</sup> See: “Memorandum of Conversation,” Washington, DC, January 12, 1965, in *FRUS*, 1964–1968, Vol. XXIX, Part II, *Japan*, Doc. 42.

<sup>337</sup> See: “Memorandum of Conversation,” Washington, DC, January 12, 1965, in *FRUS*, 1964–1968, Vol. XXIX, Part II, *Japan*, Doc. 41.

forswear weapons that could ensure national survival. Japan's support for the NPT was far from assured. It was unclear whether Japan would be a treaty signatory or a non-signatory. There were indications that Tokyo might signal its type as either an advocate or a weapons dissenter, perhaps the most wildly divergent groups.

### Views from Tokyo During the NPT Negotiations

Unlike the other three case study states in this dissertation (Egypt, Romania, and Brazil), Japan was not a member of the ENDC during the NPT negotiations.<sup>338</sup> Tokyo was, however, one of the co-sponsors of a December 1960 Irish resolution on nuclear disarmament at the UNGA.<sup>339</sup> Resolution 1576 advocated for “every effort to achieve permanent agreement on the prevention of the wider dissemination of nuclear weapons.” Some of its text is quite reminiscent of NPT Articles I and II on NWS non-transfer and NNWS non-acquisition of nuclear weapons.<sup>340</sup> But yet, the documents and other evidence I present in this section demonstrate that Japan was initially an NPT weapons dissenter. Tokyo rejected the balance of power reified by the agreement. When the treaty opened for signature in July 1968, Prime Minister Satō declined to sign it. I demonstrate below that the driver of such security concerns was China's burgeoning nuclear program, introduced in the previous section. Satō and his advisors were unwilling to accept an agreement that legitimized the PRC arsenal but disarmed Japan.

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<sup>338</sup> See: A/C.1/L.339.

<sup>339</sup> See: A/RES/1576(XV).

<sup>340</sup> See: NPT, Art. I, Art. II.

While Japan was not directly involved in the ENDC negotiations on the NPT in Geneva from 1965–1968, the Satō administration maintained a high level of interest in the proceedings.<sup>341</sup> Declassified Japanese Ministry of Foreign Affairs (MOFA) and U.S. State Department documents reveal bilateral consultations with the United States and West Germany.<sup>342</sup> Additionally, Japan coordinated multilaterally with the FRG, India, Italy, and Sweden on positions to take in opposition to the NPT (Quester 1973). MOFA documents reveal that security was the predominant Japanese concern. For instance, one set of Japanese talking points written as the ENDC negotiations were ongoing noted:

Full consideration should be given to the security problems of non-nuclear weapons states. In view of the fact that when a non-nuclear weapons state becomes party to this treaty it is to renounce on a semi-permanent basis the right to equip itself with nuclear armament, and also of the fact that it is essential for the effectiveness of this treaty to have the participation of as many non-nuclear weapons states as possible, the maximum possible considerations should be paid by nuclear weapons states to the security needs of the non-nuclear weapons states in concluding the treaty.<sup>343</sup>

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<sup>341</sup> For various internal MOFA notes on the ongoing treaty negotiations and safeguards and security issues after the treaty opened for signature see, e.g.: NPT Files 2010-3526, 2011-0740, 2011-0741, 2011-0742, 2011-0743, 2011-0745, 2011-0746, 2011-0748, 2011-0749, 2011-0750, 2011-0752, 2014-5385, 2015-1698, Diplomatic Archives of the Ministry of Foreign Affairs, Tokyo.

<sup>342</sup> See: “Memorandum From the Acting Director of the Arms Control and Disarmament Agency (Fisher) to Secretary of State Rusk,” Washington, DC, February 25, 1967, in *FRUS*, 1964–1968, Vol. XI, *Arms Control and Disarmament*, Doc. 183; “Memorandum, Federal Foreign Office of the Federal Republic of Germany to the Ministry of Foreign Affairs of Japan,” n.d., MOFA Diplomatic Archives, NPT File 2010-3525, Doc. Batch 10.5.24.

<sup>343</sup> See: “MOFA Talking Points on the Nonproliferation Treaty,” n.d., NPT File 2010-3526, MOFA Diplomatic Archives, Doc. Batch 10.5.24, pp. 2–3.

This evidence indicates that, as I have discussed throughout the dissertation, multilateral nuclear arms control for NNWS is tantamount to legally forswearing nuclear weapons. And this action would be no easy task for the Japanese government, given its security concerns.

Officials in Washington were not initially wary of growing Japanese skepticism regarding the NPT. Their perspective was generally that Johnson's pledge to Satō in early 1965 was sufficient to ensure Tokyo's endorsement of the treaty. Even though Japan had lodged a sharp protest against China's second nuclear test in international fora in May 1965,<sup>344</sup> the American position remained intact. For example, two months later, State Department intelligence assessed:

Many of the defense problems which beset India also afflict Tokyo, in that there is concern about long-term Chinese Communist intentions. Nevertheless, Japan is even further than India from taking serious steps to develop its own nuclear weapons, and it relies heavily on the American commitment to Japanese security. With these factors in the background, as well as with the mass Japanese aversions to nuclear weapons dating from World War II experience, it is highly likely that Japan would speedily adhere to a non-proliferation treaty.<sup>345</sup>

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<sup>344</sup> See: "Cable from the Chinese Foreign Ministry, 'Reactions to China's Second Nuclear Test,'" May 29, 1965, History and Public Policy Program Digital Archive, Doc. 134760, PRC FMA 113-00410-04, pp. 1–4. Trans. Caixia Lu.

<sup>345</sup> See: "Research Memorandum REU-25 from Thomas L. Hughes to the Secretary, 'Attitudes of Selected Countries on Accession to a Soviet Co-sponsored Draft Agreement on the Non-Proliferation of Nuclear Weapons,'" July 15, 1965, History and Public Policy Program Digital Archive, Doc. 134060, RG 59, Entry UD-UP 140, Bureau of Intelligence and Research, Reports Coordination and Review Staff, Intelligence Reports, 1964–1965, box 1, Chron/July 1965 Research Memos.



Fundamentally, the U.S. government had identified Japan as what this dissertation's theory would label as a treaty advocate. The nuclear umbrella and the taboo seemed to encourage Tokyo to accept the NPT. But incorrectly identifying an ally's type may have consequences, including, in this case, Washington's failure to provide adequate reassurance.

Satō's government had deep concerns about China that did not relent in the immediate aftermath of that second test. The PRC's continued testing and nuclear weapons development only exacerbated such fears. By January 1966, a U.S. National Intelligence Estimate concluded that extended deterrence would prevent Japanese nuclearization, but growing Chinese capabilities could lead to doubts about the viability of the nuclear umbrella.<sup>346</sup> The document still viewed proliferation as unlikely but indicated that Japan was now capable of developing an advanced nuclear weapons program. The JCS began to take a more pessimistic stance soon thereafter, informing Defense Secretary Robert McNamara that Japan was one of "the serious contenders" to proliferate in the future.<sup>347</sup> Concerns about Japanese proliferation only grew in May 1966, as China carried out its first thermonuclear detonation at the Lop Nur test site (Herzog, Ko, and Lee 2021). The event showed the growing threat posed by the PRC arsenal, which was turning toward miniaturized warheads for delivery on ballistic missiles.

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<sup>346</sup> See: "National Intelligence Estimate, NIE 4-66, 'The Likelihood of Further Nuclear Proliferation,'" January 20, 1966, History and Public Policy Program Digital Archive, Doc. 116887, Lyndon B. Johnson Library.

<sup>347</sup> See: "Memorandum From the Joint Chiefs of Staff to Secretary of Defense McNamara," Washington, DC, March 7, 1966, in *FRUS*, 1964–1967, Vol. X, *National Security Policy*, Doc. 118.

Regardless, Satō showed marked nuclear restraint when consulting with U.S. Ambassador to Japan Edwin Reischauer in July 1967. Satō assured his American interlocutor that “Japan was not thinking of building own nuclear forces, and would cooperate on question of nonproliferation [sic].”<sup>348</sup> That same month, reporters asked Secretary of State Dean Rusk if the United States would retaliate with nuclear weapons against a nuclear attack on Japan. Rusk was unequivocal, stating that “any such attack would be insane but that if it happened, the U.S. would defend Japan with whatever was required.”<sup>349</sup> The events of the month appeared to show Tokyo moving toward signing the NPT as the ENDC negotiation continued.

This trajectory as a potential treaty advocate was short-lived. At first glance, movement toward the NPT continued, with Satō telling the Lower House of the Diet in March 1967 that he supported the treaty in principle. He also sent special envoy Katsumi Ono to Washington to inform the Americans (Iwama 2019). Yet, the U.S. intelligence community viewed this support as conditional given their awareness of Japanese position papers and articles by top defense intellectuals. The interpretation of these materials was that “while Japan should favor an NPT, it should also reserve the right to produce nuclear weapons in the future.” Most importantly, Japanese NPT decision-making would involve Tokyo adjudicating whether the nuclear umbrella or indigenous proliferation would provide better

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<sup>348</sup> See: “Telegram From the Embassy in Japan to the Department of State,” Tokyo, July 2, 1966, in *FRUS*, 1964–1968, Vol. XXIX, Part II, *Japan*, Doc. 72.

<sup>349</sup> See: Memorandum of Conversation,” Tokyo, July 7, 1966, in *FRUS*, 1964–1968, Vol. XXIX, Part II, *Japan*, Doc. 74.

protection against China.<sup>350</sup> Because embracing the NPT would involve giving up the latter option, Japan would either embrace the treaty as an advocate or reject signature as a weapons dissenter.

Discussions about the planned U.S. Sentinel anti-ballistic missile system in the fall of 1967 increased Japanese fears of abandonment.<sup>351</sup> Great concerns arose among Tokyo's defense establishment that Washington would prioritize defensive posture over the offensive deterrent posture that was critical to protecting Japan (Yoshida 2019). In a November meeting in the U.S. capitol, Satō pressed Johnson to recommit to the defense of Japan:

At my last visit to the US, President made a pledge to protect Japan from any attack. Considering China has developed nuclear weapons since then, I would like to expect that the same commitment you made last time will be applicable for any nuclear attack against our nation (qtd. in Ota 2018, p. 202).

The U.S. President gave his word that the pledge remained firm.<sup>352</sup>

While the Japan–U.S. discussions about the umbrella were at the forefront of Japanese deliberations on the NPT, they were not the only consideration. Because Japan was not present at the ENDC, its official positions on the treaty during this period usually receive scant attention in academic studies.

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<sup>350</sup> See: "Intelligence Note 292 from Allan Evans (INR) to the Acting Secretary, 'Japanese Expert Considers Nuclear Defense,'" April 14, 1967, History and Public Policy Program Digital Archive, Doc. 134071, RG 59, Entry UD-UP 141, Bureau of Intelligence and Research, Reports Coordination and Review Staff, Intelligence Reports, 1961, 1963–67, box 2, IN-220-319-1967.

<sup>351</sup> For a discussion of the eventually abandoned Sentinel program see: Cameron 2017.

<sup>352</sup> See: "Memorandum of Conversation," Washington, DC, November 15, 1967, in *FRUS*, 1964–1968, Vol. XXIX, Part II, *Japan*, Doc. 106.

However, Foreign Minister Takeo Miki made a speech to the General Assembly on September 22, 1967.<sup>353</sup> In it, he very clearly laid out Tokyo's positions on the treaty negotiations. Miki's speech highlighted several Japanese reservations:

- France and—especially—China had not given any indication that they would accept the NPT or the LTBT. The treaty thus could not prevent tests and future Lucky Dragon incidents.
- The disarmament clauses for the NWS did not include concrete measures to be taken.
- The treaty's nuclear safeguards provisions and allowing of NWS–NWS cooperation on nuclear weapons did not make for an equality of obligations between NNWS and NWS.
- Negative security assurances would be necessary to convince states like Japan they would be protected.

The remarks from Miki suggested great difficulties surrounding Japan's acceptance of the treaty. France and the PRC continued to object to the NPT while carrying out further atmospheric nuclear test explosions (Herzog, Ko, and Lee 2021). Furthermore, NATO and the Warsaw Pact, including Japan's U.S. patron, declined to include any of Tokyo's suggestions in the draft and final NPT treaty texts.<sup>354</sup> Miki had provided conditions that would ease Japan into legally forswearing nuclear weapons, but the ENDC rejected them. Japan also had concerns about the commercial implications of Article III safeguards provisions on

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<sup>353</sup> See: A/PV.1563.

<sup>354</sup> See, e.g.: NPT, Art. III, Art. VI.

its civilian nuclear program (Quester 1970; Haginoya 1985). Still, the most difficult part of accepting the NPT would be its codification of a world that forbids Japan from the nuclear option. Indeed, Japanese government documents from the period reveal that Tokyo's support for review conferences of the treaty stemmed from a desire to reconsider its stance on nuclearization every five years.<sup>355</sup>

It is initially puzzling to square these types of sentiments on the NPT and the nuclear option with Satō's Three Non-Nuclear Principles. Speaking before the Diet in December 1967, the leader stated that Japan would not produce, possess, or allow the introduction of nuclear weapons onto its territory (Kusunoki 2008; Iwama 2019).<sup>356</sup>

With these principles, why then was Japan not certain to sign the NPT as its negotiations were reaching their end? U.S. intelligence assessed that irrespective of Satō's sentiments, Japan would continue to keep the nuclear option open.<sup>357</sup> The NPT presented the "possibility of permanent self-denial" as well as "permanent second-class power status."<sup>358</sup> This explanation would make Japan either a possible weapons dissenter or a possible status dissenter to the treaty, rejecting its balance of power in either case. Thus, the State Department predicted

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<sup>355</sup> See: "MOFA Talking Points on the Nonproliferation Treaty," p. 3.

<sup>356</sup> In addition to its implications for the NPT, this statement indicated that Japan would not allow the introduction of U.S. nuclear weapons into Okinawa after its reversion back to Japanese control in 1972. The reversion was under negotiation (Iwama 2019).

<sup>357</sup> See: "National Intelligence Estimate," Washington, DC, January 11, 1968, in *FRUS*, 1964–1968, Vol. XXIX, Part II, *Japan*, Doc. 111.

<sup>358</sup> See: "Intelligence Note From the Director of the Bureau of Intelligence and Research (Hughes) to Secretary of State Rusk," Washington, DC, January 24, 1968, in *FRUS*, 1964–1968, Vol. XXIX, Part II, *Japan*, Doc. 113.

that Japan might sign the treaty but delay ratification while considering the consequences of legally forswearing nuclear weapons. It is also important to note that safeguards considerations discussed in this chapter were not yet prominent at this time. These commercial considerations would become a much more pressing issue after Tokyo's signature. Industry would then have an expectation of ratification and the coming onset of more stringent IAEA safeguards.

Although status concerns mattered, my analysis of the historical record finds the more significant driver of Japan's NPT decision-making was the threat posed by China. This emphasis was even the case at the stage of signature. Signaling Tokyo's type as an advocate would endorse a world that allowed China to remain nuclear but prohibited Japan from nuclearization. In the end, American intelligence was correct about the result of Japan's deliberations, though security concerns were more determinative than status aspirations. Japan delayed its ratification for six years while it debated the nuclear option. The process of the prime minister signing the treaty also took time.

On January 30, 1968, Satō appeared to take a further step toward the NPT by expanding the Three Non-Nuclear Principles into Four Nuclear Policies. They included Japan adhering to the original three principles, advocating for global nuclear disarmament, relying on the U.S. nuclear umbrella, and promoting the peaceful uses of civilian atomic energy (Ruble 2009; Tatsumi 2012). Yet, Satō himself was deeply conflicted, privately telling an aid prior to declaring the Three Non-Nuclear Principles, "I should just come out and say that nuclear weapons are necessary and then resign (qtd. in Hoey 2017, p. 167)." His

statement is another observable implication of the centrality of security in Japanese NPT diplomacy. Publicly declaring Japan's non-nuclear intentions was simply not the same as type signaling as an advocate for the NPT and the balance of power created by allowing only five NWS, including China.

To that end, even as Satō declared that Japan would remain non-nuclear, his government undertook multiple studies during this period on the ramifications and feasibility of proliferation. Fitzpatrick (qtd. in Bleek 2017, p. 32) notes "at least five different government-related studies assessing the pros and cons of developing nuclear weapons" took place from 1967–1972. The extent to which the Americans were aware of the scope of such secret studies remains unclear. Still, Satō's public rhetoric and previous flirtation with the idea of proliferation caused vacillating U.S. assessments of the NPT's prospects in Japan. In late April 1968, an internal State Department memorandum noted that "the Japanese are now wandering all over the place but will undoubtedly end up supporting and signing the treaty."<sup>359</sup>

But shortly thereafter, in May 1968, the Japanese delegation to the UNGA drew attention to its continuing reservations about the treaty.<sup>360</sup> These encompassed three main points. First, Japan again sought concrete nuclear disarmament measures so that "all nuclear weapons are eliminated from the national arsenals of all states." This language was, of course, not included in the

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<sup>359</sup> See: "Memorandum From the Department of State's Country Director for Japan (Sneider) to the Assistant Secretary of State for East Asian and Pacific Affairs (Bundy)," Washington, DC, April 26, 1968, in *FRUS*, 1964–1968, Vol. XXIX, Part II, *Japan*, Doc. 120.

<sup>360</sup> See: A/C.1/PV.1565. And for additional analysis see: Shaker 1980a.

final text of NPT Article VI on disarmament, which remained forward-looking but vague.<sup>361</sup> Second, Japan was interested in an equality of obligations between the NWS and the NNWS (Hunt 2013; Iwama 2019). To accomplish this would include amending Article V on PNEs to allow the NNWS to conduct them autonomously if the technology for nuclear weapon tests and peaceful detonations became differentiable in the future.<sup>362</sup> As well, Japan wanted the IAEA to inspect the civilian nuclear facilities of the NWS. The final treaty text accomplished neither objective. Third, Tokyo wanted a nuclear safeguards agreement with the IAEA equivalent to the one being pursued by the European Atomic Energy Community (EURATOM). At that point, it seemed likely that the IAEA would recognize EURATOM's existing safeguards regime as equivalent to its own. This would allow the Europeans to fulfill their Article III safeguards obligations predominantly through IAEA observation. Japan desired a similar arrangement, although such discussions gained greater attention after the country became an NPT signatory.<sup>363</sup>

Ultimately, the provisions of the NPT stirred great controversy within the Satō administration and among Diet members. The above considerations

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<sup>361</sup> The text of Article VI reads: "Each of the Parties to the Treaty undertakes to pursue negotiations in good faith on effective measures relating to cessation of the nuclear arms race at an early date and to nuclear disarmament, and on a treaty on general and complete disarmament under strict and effective international control."

<sup>362</sup> Pursuant to a September 1966 agreement between Washington and Moscow, Article V granted the NNWS access to PNEs only if the explosions were carried out by the treaty-designated NWS (Gheorghe 2013a). Japanese government documents display an interest in autonomous PNEs and "an international guarantee system to secure peaceful uses of atomic energy." [See: "MOFA Talking Points on the Nonproliferation Treaty," pp. 2–3].

<sup>363</sup> See correspondence in, e.g.: NPT Files 2011-0741, 2011-0743, 2011-0750, MOFA Diplomatic Archives.



notwithstanding, the predominant concern dealt with accepting a treaty that would close the nuclear route to provide security to the nation. The Americans hoped that preambular language in the final NPT text emphasizing the UN Charter's call to resolve disputes without the use of force would sufficiently attenuate Tokyo's security concerns.<sup>364</sup> However, the Japanese Ambassador in Washington, Takeso Shimoda, told Secretary of State Dean Rusk in June 1968, "there were still concerns in Japan that it may be imprudent to sign the treaty in view of the threat of Communist China."<sup>365</sup>

When the NPT opened for signature on July 1, 1968, weapons dissenter Japan was not among the 57 countries that signed that day. It was not until February 3, 1970, that Satō signed. As Hunt (2013, p. 415) aptly explains, the Japanese "pondered whether denying themselves the right to develop the ultimate weapon and its attendant technologies represented a prudent or foolhardy choice."<sup>366</sup> In keeping with my theory, as a weapons dissenter, Japan would not sign the treaty and signal its type as an advocate of the accord's distribution of power until its national ambitions changed.

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<sup>364</sup> See: U.S. Department of State, "State Department telegram 174858 to Diplomatic Posts, 'NPT,'" June 1, 1968, in NSA EBB 629, "The Nuclear Non-Proliferation Treaty and the Mexican Amendments: The Negotiating Record," Doc. 36.

<sup>365</sup> See: U.S. Department of State, "Memorandum of Conversation, 'NPT,' 6 June 1968, Secret," June 6, 1968, in NSA EBB 253, "'The Impulse towards a Safer World' 40th Anniversary of the Nuclear Nonproliferation Treaty," Doc. 26.

<sup>366</sup> See also: Akiyama 2018.

### Signing and Ratifying the NPT

The NPT faced an uphill battle in Japan after Satō decided not to sign in July 1968. Quester (1970, p. 772) notes that 25 percent of Japanese citizens actively wanted the bomb during this period, and 50 percent believed Japan would eventually go nuclear. The previous section presented evidence showing that Satō was not immediately prepared to sign the NPT and embrace the distribution of power it codified. Consequently, it would take Japan more than one and a half years before signing the NPT in 1970. The Japanese transition from weapons dissenter to advocate was not without difficulties, and the Diet would not ratify until 1976. My theory predicts the commitment signaling of ratification will present a particular challenge to former weapons dissenters. States will not ratify multilateral nuclear arms control treaties if they lack credible protection against serious security threats. Satō was initially unsupportive of ratification due to security threats from China, and an influential conservative faction of the LDP emerged as even more dogmatically opposed. I show in this section that it took the government comprehensively studying the weapons option alongside unquestionable public U.S. security guarantees to achieve the commitment signal of ratification.

At first, Japan's U.S. patron seemed unaware of the enormity of a decision by Tokyo to move toward becoming a NNWS. President Johnson asked Foreign Minister Miki in August 1968 when Japan would sign the treaty. Johnson reported: "I was not able to get any commitment on timing of Japanese signature of NPT although they are still moving in that direction."<sup>367</sup> Miki indicated that the

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<sup>367</sup> See: "Telegram From the Embassy in Japan to the Department of State," Tokyo, August 21, 1968, in *FRUS*, 1964–1968, Vol. XXIX, Part II, *Japan*, Doc. 130.

delay in signing was due to the need to educate industry about safeguards procedures and to pacify critics who wanted the right to conduct PNEs. The more controversial rationale that a vocal minority of politicians and defense establishment professionals were unwilling to give up the nuclear option remained unstated. In October and November 1968, the U.S. government was still predicting Japanese signature by the end of the year.<sup>368</sup> In sharp contrast to the Romania case in Chapter 4, Japan's superpower patron did not attempt to coerce its client. Without U.S. pressure, Japan had the freedom to maneuver vis-à-vis the NPT and was not a subordinate state that was compelled to join.

The U.S. prediction of Japanese signature in 1968 did not occur, as Satō authorized several classified studies on the feasibility of developing an independent nuclear deterrent. The number of studies and their secrecy highlight the importance the government placed on national survival. Among the at least five studies conducted between 1967–1972 (Bleek 2017), the most prominent was the Cabinet Information Research Office study commissioned in September 1968. The first report in 1968 dealt with technical and economic aspects of a potential program. The second report in 1970 dealt with geopolitical issues. Taken together, they determined that Japan had the technical capabilities to build the bomb, but it would be costly and create significant tensions with China and the USSR. The studies recommended continued reliance on U.S. extended nuclear deterrence as more cost-efficient and effective. The experts argued that developing nuclear

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<sup>368</sup> See: "Memorandum of Conversation," New York, October 6, 1968, in *FRUS*, 1964–1968, Vol. XI, *Arms Control and Disarmament*, Doc. 289; "Notes on Foreign Policy Meeting," Washington, DC, November 26, 1968, in *FRUS*, 1964–1968, Vol. XIV, *Soviet Union*, Doc. 323.

weapons would diminish Japan's security (Kase 2001; Rublee 2009; Debs and Monteiro 2017; Akiyama 2018). Other conclusions included the idea that Japan lacked the strategic depth to absorb a counterforce strike given its high population density and small land area.<sup>369</sup>

As these studies were taking place, other developments further highlighted Japan as a weapons dissenter. In February 1969, Cabinet Bureau Legislation Chief Masami Takatsuji began repeating the old claim that nuclear weapons were actually compatible with the Japanese Constitution (van Sant, Mauch, and Sugita 2007). That same month, Japanese and FRG officials met to discuss nuclear weapons and the NPT. According to the Germans, the Japanese "suggested that the two countries should cooperate to become 'super powers.' The Japanese side indicated they had the necessary technology and they could do it in a relatively short time if they so decided (Iwama 2019, p. 155)." During this period, Japan continued to pursue nuclear latency by developing spent fuel reprocessing capabilities for plutonium separation (Herzog 2020).

The inauguration of Richard Nixon as the U.S. President in 1969 provided additional space for Japan to ponder the nuclear option. Nixon and his National Security Advisor, Henry Kissinger, were much less concerned about the NPT than their predecessors. Nixon's NSC even considered that "the development

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<sup>369</sup> Author interviews with: Akiyama, 2016; Hikotani, 2016; Hiwatari, 2016; Iwata, 2016; Nishida, 2016.

of an independent nuclear weapons capability might be desirable in some cases” like Japan to lessen U.S. defense expenditures and responsibilities.<sup>370</sup>

The Nixon administration's efforts to gain Satō's signature on the NPT were considerably less aggressive than Johnson's. National security officials believed that helping Japan become a member of the ENDC would give Tokyo a greater stake in arms control and ensure quick signature and ratification of the NPT.<sup>371</sup> Their thinking was that inclusion in the organization would offset any negative feelings the Japanese had about not being a part of the treaty negotiations (Quester 1970). With U.S. assistance, Japan joined the ENDC on July 3, 1969 (Shaker 1980a, p. 74). Regardless, Japan now faced a growing PRC ballistic missile threat and frequent patrols of Soviet strategic bombers and submarines near its sovereign territory (Akiyama 2018). Many reasons remained for Japan to continue being a weapons dissenter to the NPT.

Yet, as further studies recommended against Japanese nuclearization, the tide began to turn toward signing the NPT. This trend was moved forward by two additional developments. First, the West Germans informed Tokyo of their plans to sign the NPT in November 1969 (Iwama 2019). The impact of Bonn's signature cannot be overstated. The FRG was Japan's closest ally on nuclear nonproliferation issues due to its history, advanced industrial capabilities,

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<sup>370</sup> See: “Memorandum From the President's Assistant for National Security Affairs (Kissinger) to Vice President Agnew,” Washington, DC, January 28, 1969, in *FRUS*, 1969–1976, Vol. E-2, *Documents on Arms Control and Nonproliferation*, 1969–1972, Doc. 4.

<sup>371</sup> See: “National Security Council Under Secretaries Committee Decision Memorandum 7,” Washington, DC, May 2, 1969, in *FRUS*, 1969–1976, Vol. E-2, *Documents on Arms Control and Nonproliferation*, 1969–1972, Doc. 22.

safeguards concerns, and resistance to closing the nuclear option. Second, during this same month, Satō and Nixon signed a joint communiqué that included the reversion of Okinawa to Japanese control and a secret provision to allow the introduction of U.S. nuclear weapons to the island in crises (Schaller 1997; Hoey 2015). Japan also committed to taking on increased responsibility for its defense in exchange for extending the bilateral security treaty. Nixon would further articulate the U.S. security guarantee throughout 1970.

The pieces had now fallen into place for Japan to signal its type as an advocate of the NPT and the balance of power it enshrined. Satō and Miki had input from expert studies that proliferation was not in Japanese interests, a reaffirmed U.S. nuclear umbrella commitment, and the West German precedent. From a political standpoint, it seemed prudent to signal that Japan endorsed the NPT as a NNWS. In mid-November 1969, Satō's secret emissary informed Kissinger that Japan would sign the treaty, but it would take a while to make a final decision on ratification (Iwama 2019).<sup>372</sup>

On February 3, 1970, Satō finally signed the treaty. Ota (2018) notes that his reversal was only possible due to the U.S. extended deterrent pledge, enabling Japanese leaders to imagine a future without possession of nuclear weapons. However, the Japanese government highlighted several reservations alongside the occasion of the signature. These included: China's lack of participation in the NPT, the need for negative security assurances and concrete

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<sup>372</sup> See: "Memorandum From the President's Assistant for National Security Affairs (Kissinger) to President Nixon," Washington, DC, November 18, 1969, in *FRUS*, 1969–1976, Vol. XIX, Part II, *Japan*, 1969–1972, Doc. 26; "Memorandum of Conversation," Washington, DC, November 21, 1969, in *FRUS*, Vol. XIX, Part II, Doc. 35.

steps toward nuclear disarmament, and the treaty's potential to interfere with civilian atomic research.<sup>373</sup> Additionally, Japan warned that it could withdraw from the NPT pursuant to Article X if its supreme national interests required.<sup>374</sup>

As my theory predicts from a former weapons dissenter, Japan's predominantly security-driven concerns pointed to a protracted ratification debate to come. But, as Ambassador Masahiro Nisibori stated at the first NPT Review Conference in 1975: "The government of Japan [...] agreed the spirit of the Treaty and signed it [sic]."<sup>375</sup> Nisibori's statement epitomizes the concept of type signaling, which is different from the commitment signaling of ratification. Legally closing the door on nuclear weapons would pose a much more formidable challenge. Satō signed the treaty and accepted its balance of power in principle, but he and his advisors had little interest in speedy ratification. Commitment signaling, of course, required Japan to bear ex-ante sovereignty costs of increased IAEA safeguards verification. But more importantly, it also carried the powerful ex-post cost of legally forswearing nuclear weapons that could ensure state survival in the face of serious security threats. Relying on the credibility of U.S. protection was easier said than done given the uncertainty of the future.

Despite Japanese type signaling as an advocate of the principles of the NPT, the treaty also remained divisive in the Diet and the national security

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<sup>373</sup> See: "Statement of the Government of Japan on the Occasion of the Signing of the Treaty on the Non-Proliferation of Nuclear Weapons," NPT File 2011-0749, MOFA Diplomatic Archives.

<sup>374</sup> See: NPT, Art. X.

<sup>375</sup> See: "Statement by Ambassador Masahiro Nisibori at the First Plenary Session of the Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons," MOFA Diplomatic Archives, NPT File 2014-5385, Doc. 1.

community (Quester 1970; Endicott 1977).<sup>376</sup> Roughly two-thirds of Japanese opposed nuclearization (Shaker 1980b, p. 825), but public opinion on the NPT was also negative (Quester 1970). This polling points to the difference between pursuing the bomb and legally forswearing it. Classified studies on the feasibility of proliferation continued into 1972 (Bleek 2017) regardless, and some members of the Diet publicly questioned the credibility of the U.S. nuclear umbrella (Kase 2001). Because Japan faced serious security threats from China and—to a lesser extent—the USSR, such sentiments increased the difficulty of ratification. For their part, the Americans continued to try and mitigate such fears. Kissinger told Miki in June 1970, for instance, “that Japan was so important that we couldn’t permit it to be destroyed in a nuclear war.”<sup>377</sup>

Still, the Nixon administration’s actions often seemed to undercut the credibility of U.S. assurances to Japan. Examples of policies that weakened Washington as a patron included the Nixon Doctrine’s calling on Asian states to take on more defense responsibilities, and especially, U.S. rapprochement with China in 1971. The Japanese were livid about the latter, which raised questions about the U.S. willingness to defend Japan. The Ambassador in Washington, Nobuhiko Ushiba, remarked to his American counterparts:

Satō had over the years based his policy on the Yoshida tradition of close collaboration with the US in foreign policy, especially in the China issue, but the charge would now be made that the US had pulled the

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<sup>376</sup> See also: “Memorandum of Conversation,” Washington, DC, September 10, 1970, in *FRUS*, 1969–1976, Vol. XIX, Part II, *Japan*, 1969–1972, Doc. 53.

<sup>377</sup> See: “Memorandum of Conversation,” Washington, DC, June 23, 1970, in *FRUS*, 1969–1976, Vol. XIX, Part II, *Japan*, 1969–1972, Doc. 45.



rug out from under this policy by making this dramatic move on China policy, not only without consulting but even without any substantial prior notice to the Japanese government.<sup>378</sup>

Compounding these fears, Washington dropped its veto and allowed China to take over the permanent seat on the UNSC from Taiwan in 1971. And the following year, the Americans adopted a relatively neutral stance on the Japan–China dispute over the Senkaku Islands (Schaller 1997). When Kissinger visited Tokyo in June 1972, he—unsurprisingly—met with current and former senior Japanese officials who were skeptical of both the NPT and the U.S. nuclear umbrella.<sup>379</sup>

The politics of multilateral nuclear arms control were more complex than Japanese security concerns alone. Commercial and industrial interests thus present a possible alternative explanation to the narrative that security threats delayed Japan's NPT ratification. Japan had a growing civilian nuclear power sector, whose critiques of the treaty gained prominence during the administrations of Satō's successors Kakuei Tanaka and Takeo Miki (the former foreign minister). George Quester (1970) and T. V. Paul (2000) even go so far as to attribute the delay in ratifying the NPT to issues of commercial nuclear safeguards. Such considerations were less prominent during the signature phase, but the Japanese

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<sup>378</sup> See: "Memorandum of Conversation," Washington, DC, July 20, 1971, in *FRUS*, 1969–1976, Vol. XIX, Part II, *Japan*, 1969–1972, Doc. 81.

<sup>379</sup> "Memorandum of Conversation, 'Meeting of Henry Kissinger and Liberal Democratic Party Leaders Nakasone, Kosaka, and Mizuta,'" Tokyo, June 11, 1972, in "Japan and the United States: Diplomatic, Security, and Economic Relations, Part I, 1960–1976," Digital National Security Archive Document Set, Doc. JU01557; "Memorandum of Conversation, 'Mr. Kissinger's Conversation with Four Japanese Ex-Foreign Ministers on U.S.–Japanese Relations,'" Tokyo, June 11, 1972, Doc. JU01558; "Memorandum of Conversation, 'Mr. Kissinger's Discussion of U.S.–Japan Political and Economic Relations with Mr. Fukuda,'" Tokyo, June 11, 1972, Doc. JU01559.

type signal as a treaty advocate worried some industrialists who feared that compliance with more extensive IAEA safeguards was now imminent.

It is certainly true that segments of the nuclear industry were unhappy about potential Article III safeguards obligations. Unlike many other civilian nuclear powers, Japan's technologies did not use English-language interfaces or materials accounting. There were also concerns that the IAEA would seek to ensure that no more than 2 percent of fissionable plutonium leaked, "but Japanese electrical power company officers [had] suggested that anything greater than 90% certainty in inspection will constitute an unbearable economic burden (Quester 1970, p. 767)." For the IAEA, the fear was that a 10 percent uncertainty margin could allow for a clandestine nuclear weapons program as plutonium production grew. Japan also had its own national safeguards system (Imai 1969; Haginoya 1985). But new civilian energy partners like Australia, Britain, Canada, France, and the United States wanted IAEA inspections of facilities in Japan. India's "Smiling Buddha" PNE of 1974 only added further impetus to the safeguards pressure. The solution for Tokyo was to seek equivalent treatment to EURATOM, whose member states were permitted to fulfill their NPT obligations primarily through IAEA oversight of European safeguards inspections.<sup>380</sup>

However, the historical evidence does not support the notion that safeguards difficulties were the driving force behind the delayed ratification. In fact, Ambassador Nobuyasu Abe (2020), one of Japan's most noted arms control experts, recalls that the nuclear power industry supported early ratification to

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<sup>380</sup> See: INFCIRC/193.

obtain advanced energy technology from the Americans. By November 1974, the U.S. State Department had assessed: “The primary argument against ratification—that Japan should not foreclose its nuclear options—is so politically sensitive that its proponents tend to hide behind the other lines of reasoning.”<sup>381</sup> Safeguards-related arguments by Japanese leaders, diplomats, and hawkish members of the Diet were one such example. This evidence provides support for my theory’s predictions that ratification is a process driven by security considerations. Safeguards may have contributed to some of the delay, but in the end, they were not as pivotal as security considerations were for commitment signaling.

By February 1975, Japan had achieved safeguards parity with EURATOM, and Foreign Minister Kiichi Miyazawa had secured the support of JAEC head Yoshitake Sasaki and Hiromi Arisawa of the Japan Atomic Industrial Forum (Endicott 1977; Gibbons 2016). Still, opposition to the treaty remained, again backing my theoretical expectation that security is central to ratification. Prime Minister Miki’s administration identified that the cause of dissent was the desire of LDP hawks in the far-right Seirankai faction for “a free-hand on nuclear devices (Endicott 1977, p. 278).” The safeguards protocol agreed to in principle in early 1975 was simply not enough to achieve Diet ratification, as security concerns predominated in both houses of the body.<sup>382</sup>

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<sup>381</sup> See: “State Department Background Paper, ‘Japan and the Nuclear Non-Proliferation Treaty,’” November 1974, in “Japan and the United States: Diplomatic, Security, and Economic Relations, Part I, 1960–1976,” Doc. JU01903.

<sup>382</sup> For the text of the safeguards agreement see: INFCIRC/255.

Miki, the head of the LDP, pursued two avenues to combat the dissenting hawk faction from within his party. First, he denounced the free-hand argument when speaking before the Diet in March 1975. Former Prime Minister Satō came out in support of the treaty as well, telling the *Asahi Shimbun*, “We have come to the time of ratifying the NPT. Our country should take a sensible action quickly (qtd. in Endicott 1977, p. 280).” Second, Miki sent Miyazawa to Washington to meet with President Gerald Ford’s Secretary of State, Kissinger. The two released a joint public statement recommitting Washington to Japan’s security:

1) Both Japan and the U.S. are of the judgment that the maintenance of the Security Treaty will be in the interests of both sides, when viewed from a long-range standpoint;

(2) U.S. nuclear war potential is an important deterrent power toward aggression against Japan from the outside;

(3) the U.S. attaches importance to its treaty obligations that it will take charge of the defense of Japan in the case of its being attacked by nuclear or conventional weapons, and Japan will also continue to carry out its obligations based on the Treaty (qtd. in Endicott 1977, p. 282).

The timeline of events shows the importance of the assurances. Miyazawa obtained the pledges from the Ford administration on April 12, 1975, and Miki then submitted the treaty to the Diet for ratification on April 22 (Endicott 1977). Yet, even these assurances were not immediately sufficient to allay the hawk faction’s security concerns (Lanoszka 2018a), and all Diet discussions of foreign affairs were temporarily derailed over bribery scandals involving U.S.

defense contracting firm Lockheed Martin. A protracted ratification debate over the security implications of the NPT recommenced in 1976. The Socialist and Komeito parties, alongside most LDP members, supported the treaty due to extended deterrence providing security for Japan and Article VI promoting eventual nuclear disarmament. The Communists, though a minority party, stood against the NPT due to its failure to include concrete measures for operationalizing nuclear disarmament of the NWS.<sup>383</sup>

But most importantly, the hawk faction of the LDP stressed the nuclear threat from China as the key reason why Japan should not permanently shut the door on the nuclear option.<sup>384</sup> The Miki administration engaged in a campaign on the Diet floor and behind the scenes to convince the faction of the reliability of the U.S. nuclear umbrella and ratification's compatibility with Japanese security interests. According to Abe (2020, p. 176), "One of the arguments [Miki and Miyazawa] used to persuade the conservatives was that if the worst happened, Japan could invoke Article X of the treaty to withdraw with three months' notice." Both houses of the Diet needed to approve for the commitment signaling

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<sup>383</sup> See: Legislative Records of the 77th Japanese Diet, Fourth Session of the Foreign Affairs Committee of the Lower House, April 23, 1976, <https://kokkai.ndl.go.jp/#!/detail?minId=107703968X00419760423>; Fifth Session of the Foreign Affairs Committee of the Lower House, April 27, 1976, <https://kokkai.ndl.go.jp/#!/detail?minId=107703968X00519760427>; Eighth Session of the Foreign Affairs Committee of the Upper House, May 21, 1976, <https://kokkai.ndl.go.jp/#!/detail?minId=107713968X00819760521>.

<sup>384</sup> See, e.g.: Legislative Records of the 77th Japanese Diet, Sixth Session of the Foreign Affairs Committee of the Upper House, May 18, 1976, <https://kokkai.ndl.go.jp/#!/detail?minId=107713968X00819760521>.

of ratification to occur. The Lower House did so on April 28, 1976, and the Upper House followed a few weeks later on May 24.<sup>385</sup>

On June 8, 1976, Japan deposited its instruments of ratification in London, Moscow, and Washington. The Miki administration had successfully convinced enough members of the hawk faction to support ratification by pledging to negotiate an even stronger relationship with Washington. There had been pervasive questions about Japan's security under the U.S. nuclear umbrella in the face of nuclear-armed China, and to a lesser extent, the USSR. As Abe (2020, p. 176) explains, "While a significant majority of the Japanese people were firmly against the Japanese acquisition of nuclear weapons, the conservative wing of the ruling Liberal Democratic Party was reluctant to abandon future options to acquire them." Legally forswearing nuclear weapons through the commitment signaling of ratification only became possible after extensive public U.S. nuclear security assurances and expert study of the Japanese nuclear option.

In addition to the safeguards explanation, there are two other alternative possibilities addressed in the literature for Japan's delayed ratification. Hymans (2011) attributes the delay to conservatives' views about the unfairness of the division of the world into NWS and NNWS. There was undoubtedly much rhetoric of this nature on the Diet floor and communications between Tokyo and Washington. However, the evidence I presented in this chapter shows that

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<sup>385</sup> See: Legislative Records of the 77th Japanese Diet, Fourteenth Session of the Main Chamber of the Lower House, April 28, 1976, <https://kokkai.ndl.go.jp/#!/detail?minId=107705254X01419760428>; Fourteenth Session of the Main Chamber of the Upper House, May 24, 1976, <https://kokkai.ndl.go.jp/#!/detail?minId=107715254X01419760524>.

Japanese decision-makers—from prime ministers to diplomats and Diet members—had concerns about the credibility of the U.S. nuclear umbrella in the face of threats emanating from China. Japanese leaders certainly did not want the state relegated to second-tier status, but the U.S. security guarantee was crucial for national survival. Ratification proceedings began soon after a public re-commitment of the United States to extended nuclear deterrence and protecting Japan's sovereignty. Likewise, Miki's argument to the hawks that Japan could withdraw from the NPT in the future if the threat environment changed further confirms that security was the predominant driver of ratification.

Another potential alternative explanation comes from Solingen (2007, p. 65), who argues, "Only domestic dynamics can explain why a certain view prevailed over others leading to Japan's ratification in 1976, about six years after signature." Solingen (2007, p. 65) bases her analysis on the idea that "the decision to remain nonnuclear was prior to and not a consequence of the decision to ratify the NPT." Yet, my argument is that opting for nuclear forbearance at a specific time is not equivalent to legally forswearing nuclear weapons. This section showed that NPT signature and ratification are both costly and represent different levels of obligation. It was difficult for Japanese decision-makers to signal the state's type as an advocate for a distribution of power that forbade them from obtaining nuclear weapons. Costlier commitment signaling to abide by such parameters did not occur until several years later. Initial studies on the feasibility of the bomb before Satō signed the NPT were, in fact, followed by additional research that began after signature. It is also true that the Diet settled NPT

ratification per Japanese law. The evidence from the Diet debates supports my theory: The protracted ratification debate focused predominantly on substantive matters of security on the floor of both houses of the Diet. Commitment signaling occurred once there was a consensus that Japan's security environment allowed the country to remain non-nuclear by renouncing the nuclear option. Credible U.S. protection was indispensable to this future.

### Post-NPT Nuclear Activities and the CTBT Context

In the era after NPT ratification, Japan remained under the protection of the U.S. nuclear umbrella. Tokyo would also undertake efforts to build further reactors (both for research and power production) and nuclear fuel cycle facilities. These included investments in front-end capabilities—uranium enrichment and fuel fabrication—and back-end capabilities—spent fuel reprocessing (Watanabe and Murase 1977; Herzog 2020).<sup>386</sup> Such developments enabled Japan to accumulate a large stockpile of plutonium that could be used to build a nuclear weapon. Still, Japan was firmly embedded in the NPT architecture as a vocal NNWS. Another opportunity to participate in multilateral nuclear arms control would come about in the mid-1990s with the CTBT. Having embraced the NPT and legally forsworn nuclear weapons, Japan was quick to sign and ratify. The much faster timeline to join the CTBT than the NPT provides further evidence to support my theory, as Japan had credible U.S. protection. There were no barriers to its type signaling as an advocate and subsequent commitment signaling.

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<sup>386</sup> Japan also succeeded in pilot-scale mastery of uranium mining, milling, and conversion but eventually abandoned these pursuits (Herzog 2020, p. 76).



Not all of Japan's nuclear development occurred without controversy. The Indian PNE and the Brazil–FRG nuclear deal led to an increased nonproliferation emphasis in the late 1970s under the U.S. administration of Jimmy Carter. While Carter praised Japan for its ratification of the NPT, he was apprehensive about supplying enriched nuclear fuel for its reactors that would then be reprocessed by Britain, France, or Japan itself.<sup>387</sup> Officials under Prime Minister Yasuo Fukuda believed they were “being lumped in with Brazilians and Pakistanis” despite their NPT commitment.<sup>388</sup> It took multiple rounds of high-level discussions in 1977 and for Fukuda to reassure Carter of Japan's Three Non-Nuclear Principles and safeguards obligations before the U.S. President authorized the reprocessing of fuel.<sup>389</sup>

Few nuclear disagreements between Tokyo and Washington occurred after resolving the reprocessing controversy and as the Cold War wound down. Much of this may be attributed to Japanese efforts to normalize relations with China. When the Cold War ended, the Soviet threat to Japan had dissipated, and China would soon accede to the NPT in 1992. Japan remained tied to the United States for its security even as it faced a reduced level of threat.

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<sup>387</sup> See: “Memorandum of Conversation,” Tokyo, February 1, 1977, in *FRUS*, 1977–1980, Vol. XXVI, *Arms Control and Nonproliferation*, Doc. 320; “Intelligence Report,” Washington, DC, March 1977, in *FRUS*, Vol. XXVI, Doc. 327.

<sup>388</sup> See: “Memorandum From Vice President Mondale to President Carter,” Washington, DC, February 4, in *FRUS*, 1977–1980, Vol. III, *Foreign Economic Policy*, Doc. 5.

<sup>389</sup> See: “Memorandum of Conversation,” Washington, DC, March 22, 1977, in *FRUS*, 1977–1980, Vol. XXVI, *Arms Control and Nonproliferation*, Doc. 329; “Telegram From the Department of State to the Mission to the International Atomic Energy Agency,” Washington, DC, May 5, 1977, in *FRUS*, Vol. XXVI, Doc. 341; “Memorandum of Conversation,” London, May 7, 1977, in *FRUS*, Vol. XXVI, Doc. 342.

There were, however, some anomalies. Shortly before becoming Prime Minister in 1991, former Foreign Minister Miyazawa acknowledged that, in the future, young Japanese “may want to choose the lesser of two evils and opt to build their own umbrella [...] to be their own masters (qtd. in Solingen 2010, p. 133).” The Japanese also were at first resistant to the indefinite extension of the NPT in 1995, fearing that it might eventually lead to the loss of U.S. extended deterrence (Paul 2000). Tokyo ultimately accepted and endorsed the extension (Graham 2002, Gibbons 2016). While the NPT extension was under consideration, the Japanese defense establishment again studied the nuclear option in 1995. A resulting report concluded that the U.S. umbrella and nuclear forbearance remained the best policy choices for Japan’s national security (Campbell and Sunohara 2004; Hughes 2007; Rublee 2009).

Among the most consequential events for non-nuclear Japan after the Cold War was the negotiation of the CTBT at the CD in Geneva from 1993–1996. Tokyo had a long history of opposing nuclear testing dating back to its outrage at the Lucky Dragon incident, its support for the LTBT’s ban on atmospheric testing, and its Diet resolutions calling for global testing moratoria (Kurosaki 2019). The *Hibakusha* and other disarmament groups strongly backed this anti-testing advocacy. Additionally, Japan’s experience with earthquakes and volcanoes provided expertise in seismoacoustic monitoring techniques for detecting nuclear tests. For example, in 1973, Japan had convened meetings to assess the sensitivity of seismometers in monitoring underground test explosions (Shaker 1980b). It was thus unsurprising that Japan’s representative at the CD,

Ambassador Yoshitomo Tanaka, emerged as one of the most vocal proponents of a CTBT (Johnson 2009).

Early Japanese positions on the treaty showed an evolution in Tokyo's nuclear politics. Japanese officials in Geneva understood that prohibiting nuclear tests would have implications for disarmament. Yet, Japan was not comfortable with the CTBT including the language of disarmament, which could affect the provision of the U.S. nuclear umbrella. This was quite a change from Japan's unsuccessful insistence that concrete disarmament measures should be a part of NPT Article VI. Furthermore, Japan initially wanted the IAEA—rather than the new CTBTO—to be responsible for monitoring and verification of nuclear tests (Ramaker et al. 2003). The country that had long been skeptical of the IAEA and its safeguards regime was now calling for expansion of the agency's mandate.

Japan also no longer tried to preserve the right of the NNWS to PNEs, which had lost credibility in the scientific community by the early 1980s. Early in the negotiations, Ambassador Tanaka took to the floor at the CD and stated: "Japan is of the view that any nuclear-weapon test explosion should be prohibited, including those which are called 'peaceful nuclear explosions.'"<sup>390</sup> The Japanese delegation would accordingly support Australian treaty language that banned PNEs.<sup>391</sup> When the treaty opened for signature, its text banned all nuclear

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<sup>390</sup> See: CD/PV.669.

<sup>391</sup> See: CD/NTB/WP.49; CD/NTB/WP.222.

explosions, regardless of their purpose, in all environments—underground, underwater, and in the Earth’s atmosphere.<sup>392</sup>

Several Japanese positions also appeared to be intended to constrain China, Tokyo’s most prominent regional rival. Not only had China sought to allow PNEs by the NWS, but Beijing also wanted the ability to conduct low-yield tests that would likely have little military significance for weapons development (Ramaker et al. 2003; Johnson 2009). These proposals were unacceptable to the Japanese, who took note of China’s limited number of previous nuclear tests. In the Japanese view, such loopholes might have allowed China to continue making progress on weapons development and gathering data for high-performance computing simulations used to design warheads.<sup>393</sup> Consequently, Japan fought hard for a zero-yield test ban, a sensitive IMS that could detect events with yields as low as one kiloton, and the right of states to contribute information gained from NTM to the CTBTO (Ramaker et al. 2003; Johnson 2009).<sup>394</sup> Japan also began hosting multilateral CTBT verification conferences outside the auspices of the CD.<sup>395</sup> Tokyo similarly supported procedures for intrusive OSI after the treaty’s entry-into-force, a policy that aroused concern among the Chinese delegation.

Japan actively participated in the CTBT negotiations, and many of its proposals became a part of the test ban regime. The Japanese, however, were on

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<sup>392</sup> See: CTBT, Art. I.

<sup>393</sup> Author interview with Ichimasa, 2016.

<sup>394</sup> See also: CD/PV.669.

<sup>395</sup> See: CD/PV.676.

the losing side of the treaty's entry-into-force procedures. As Tanaka articulated, Japan did not want any single state to have the right to obstruct the CTBT from coming into force.<sup>396</sup> Japan accordingly objected to proposals for the treaty to require all five NPT-designated NWS to ratify before entry-into-force. Instead, Japan wanted a simple number of 30 states—whether NNWS or NWS—to ratify (Ramaker et al. 2003; Johnson 2009). But this was intolerable to the NWS, who would not accept a treaty that might prevent some states from testing while allowing their nuclear-armed rivals to do so. In the end, the negotiating parties reached an agreement on Annex 2 and its requirement that the 44 “nuclear-capable” states with research reactors or nuclear power programs ratify before entry-into-force.<sup>397</sup> Japan is among the 44 Annex 2 states.

Before the treaty had even opened for signature, France challenged Japan's commitment to the CTBT. In 1995, French President Jacques Chirac ordered a series of six test explosions in French Polynesia to gather weapons-related data before joining the CTBT. Prime Minister Tomiichi Murayama and his advisors were stunned. They strongly condemned France at the UN and even threatened to cut off all trade (Graham 2002). The French tests occurred 1995–1996, regardless, and it took some time for bilateral relations to recover.

When the CTBT opened for signature on September 24, 1996, the Japanese Prime Minister at the time, Ryūtarō Hashimoto, was one of the first world leaders to sign. Ratification by the Diet occurred relatively quickly, taking place on

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<sup>396</sup> See: CD/PV.675.

<sup>397</sup> See: CTBT, Annex 2.

July 8, 1997. The ratification debate in the Diet was pro forma and can hardly be called a debate, in striking contrast to the protracted discussions over the NPT and national security. That Japan type signaled as an advocate of the CTBT and had little difficulty in commitment signaling was unsurprising. Having already legally forsworn nuclear weapons by ratifying the NPT, a prohibition on nuclear tests was a continuation of Japanese arms control advocacy and history opposing testing. Further, Tokyo had a reliable patron in the United States and the administration of Bill Clinton. Commitment signaling was eased by this relationship and the fact that the CTBT placed significant restrictions on Chinese vertical nuclear proliferation.

As per Annex 1 to the CTBT's protocol, Japan hosts ten IMS facilities that continuously monitor the globe for nuclear explosions despite the treaty's non-entry-into-force.<sup>398</sup> These include six seismic stations, one infrasound station, two radionuclide stations, and one radionuclide processing laboratory.<sup>399</sup> All of these facilities have been certified by the CTBTO and are operating, as confirmed by their role in detecting the six North Korean nuclear tests and providing data on the Fukushima Daiichi Nuclear Disaster.<sup>400</sup>

### Conclusion

Japan's nuclear history has been dynamic over the past 75 years. The only country targeted in atomic bombings also studied the feasibility of building its own nuclear weapons. Japan also relies heavily on the nuclear umbrella of the United States,

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<sup>398</sup> See: CTBT, Protocol, Annex 1.

<sup>399</sup> See: CTBTO, "CTBTO World Map," updated as of March 9, 2021, <https://www.ctbto.org/map/>.

<sup>400</sup> See, e.g.: Schöppner et al. 2012; Gibbons et al. 2017.

which attacked Hiroshima and Nagasaki, for its security. Today, Tokyo also has a robust civilian nuclear energy program that some scholars warn may allow for rapid proliferation if U.S. assurances wane in the face of threats from China and North Korea (Debs and Monteiro 2018). Yet, the nuclear taboo remains strong among the public in this threshold state. One recent study showed that 75 percent of the Japanese public supports nuclear disarmament (Baron, Gibbons, and Herzog 2020). Another indicated that a staggering 85 percent of Japanese would not support U.S. use of nuclear weapons against North Korea, even if that country launched a nuclear strike on Japan (Allison, Herzog, and Ko 2021).

But the common thread in Japan's nuclear history is clear: The prevailing narrative is one of security and national sovereignty. Domestic politics, norms, civilian nuclear energy aspirations, and other factors covered in the literature were undoubtedly present. These considerations were less prominent, however, due to a core focus on ensuring national survival.

In the case of the NPT, this chapter demonstrates that security interests—combined with the disparate signaling effects of signature and ratification—provide the best explanation for Japan's nuclear diplomacy. Satō could not immediately type signal as an advocate for the treaty because it would mean acceptance in principle of Japanese disarmament. Japan was a weapons dissenter that could only become an NPT advocate in 1970 once its leaders could accept the treaty's distribution of power. This occurred in part due to preliminary expert studies and U.S. security assurances. Signing a treaty is less costly than ratifying and legally forswearing nuclear weapons on a permanent basis.

Commitment signaling of this nature was contentious, taking years of further study and obtaining more iron-clad public U.S. nuclear security guarantees. After a nearly six-year delay, the Diet finally ratified in 1976 during Prime Minister Miki's administration. Japan then became a more active player and leader in international nuclear arms control and nonproliferation diplomacy.

Tokyo was at the forefront of the negotiation and early ratification of the CTBT, although the treaty has not entered into force. Whether Japan remains a non-nuclear state remains to be seen, but my dissertation's theory predicts that this will long remain the case given the significant costs entailed in withdrawing from arms control treaties.



## **Chapter 7 – Conclusion**

In this concluding chapter, I highlight four central takeaways of the dissertation. First, I revisit and summarize the key concepts and principles of my process-based theory of state entry into multilateral nuclear arms control treaties. Second, I summarize the data and primary contributions of my comparative historical case studies of Egypt, Romania, Brazil, and Japan. Third, I discuss the dissertation's implications for the current and future scholarly investigation of nuclear weapons. Finally, I offer insights for policy-making and analysis of nuclear politics, including thoughts on the TPNW of 2017—popularly known as the Nuclear Ban Treaty.

### **Core Elements of the Argument**

This dissertation presented the first process-based theory of why states legally forswear nuclear arms that can guarantee national survival. It did so by investigating causal mechanisms that lead advanced nuclear states—potential proliferators—to sign and ratify multilateral nuclear arms control treaties. These treaties make illegal state pursuit of nuclear weapons or prohibit essential elements of nuclearization like nuclear explosive testing. By focusing on “hard cases” for arms control, those countries with notable civilian nuclear energy programs or weapons aspirations that considered building the bomb, the dissertation offered a theory that generalizes to the central participants in the game of nuclear diplomacy. Such countries also have security interactions with nuclear-armed states and the economic and scientific resources necessary for proliferation. The behavior of states without these civilian nuclear capabilities or weapons aspirations often conforms to the theory's logic. But there are other times,

however, when small developing states simply lack the resources or interest to prioritize nuclear issues. Their signature and ratification timelines can be less predictable and fall outside the scope of this dissertation.

The main differentiator between my theory and past studies of the NPT or other agreements is its focus on process. Existing literature has shown that factors such as norms, security, and treaty-contingent benefits played a part in states' evaluation of agreements. Such explanations contribute to the scholarly understanding of nuclear politics. Yet, they leave room for three fundamental areas for improvement. First, the literature offers only limited generalizability, as national treaty narratives may vary considerably. Second, such studies show the presence of the aforementioned factors without thoroughly adjudicating between the magnitude of different potential causes. Third, scholars have not distilled the process of arms control into its components of signature and ratification, instead choosing to focus on either one or the other. Many of these shortcomings are no fault of the authors, as their coverage of treaty behavior is epiphenomenal to their study of nuclear proliferation. They are not seeking to explain signature and ratification decisions systematically.

My theory of legally forswearing nuclear weapons via multilateral nuclear arms control supplies ample space for multifarious national narratives. Its emphasis on process subsumes other explanations in the literature. The reason why, as the dissertation demonstrates, is that signature, ratification, and accession (when necessary) decisions are both identifiable and generalizable. They conform to social scientific logic and present clear patterns. Each of the two steps in the

process carries different legal weight and consequences. If signing is saying “No” to nuclear weapons, nuclear testing, or fissile material production, ratifying is saying “Never.” As this dissertation has shown, ratification is often a much more imposing decision than signature. Scholars and policy-makers should thus not be surprised by frequent time-lag delays between these actions.

Signing a treaty is a *type signal* wherein national decisions to be a *signatory* or *non-signatory* send messages to the international community. A state’s allies and adversaries will surely take note. Indeed, a decision to sign or abstain from doing so showcases state views with respect to the balance of power codified by the treaty. Signatories will endorse the principles of the agreement either because they are *advocates* that support the envisioned balance of power or *subordinates* whose patron coerces them. Non-signatories show their dissatisfaction with the treaty’s balance of power. They are either *status dissenters* that have prestige rationales or *weapons dissenters* that have security rationales. National ambitions and perceptions of the treaty’s distribution of power must evolve before non-signatories may then become signatories.

Unlike signature, treaty ratification is a *commitment signal* that finalizes the process of legally forswearing nuclear weapons. Ratification also subjects the state to intrusive verification and consequences for violation or withdrawal. Consequently, security is the main driver of ratification decisions. States will not ratify multilateral nuclear arms control treaties if they lack credible protection against a serious security threat. Commitment signaling will occur if no such threats exist or adequate measures are taken to mitigate threats.

Lastly, an accession decision once a treaty has entered into force but may no longer be signed by states, is a *joint signal*. Accession has the same legal recognition as ratification, but state decisions must simultaneously address the rationales for type signaling and commitment signaling. In fact, there are states—such as Brazil—that confronted no serious security threats but did not accede to treaties until overcoming type signaling barriers to endorsement.

The theory is one of necessary conditions. Policy-making about accepting arms control treaties can be immensely complicated. Special attention from scholars is necessary to avoid oversimplifying the phenomenon in pursuit of a parsimonious monocausal theory. My focus on the process of arms control concedes that there are multiple inputs involved in such decisions, several of which may have contributed to states entering into treaties. However, the categories I lay out for type and commitment signaling are necessary conditions and the predominant drivers of decision-making.

### Revisiting the Cases

The dissertation demonstrated the applicability of the theory by examining representative cases from among the 35 potential proliferators identified in the scholarly literature. As I showed, the theory maps on to four cases with diverse regime types, economic standing, alliance structures, regional environments, and more. Each case epitomizes a state type in my typology with respect to signing multilateral nuclear arms control treaties. In the dissertation, the treaties spotlighted are the most universal of this kind of accord: the NPT of 1968 and the CTBT of 1996. Egypt was an advocate for the NPT, much like other countries such

as Poland and Sweden. Romania was a subordinate, as was West Germany and the former Yugoslavia. Brazil was a status dissenter like Argentina and Chile. Japan was a weapons dissenter alongside India and Israel. CTBT decisions were simpler for countries that had already forsworn nuclear weapons via the NPT, although the case of Egyptian non-ratification suggests this is hardly universal.

There are further examples, of course, but the logic of type and commitment signaling has broad applicability. Additionally, the archival findings and original elite interviews of the dissertation challenge existing explanations of state behavior. This project thus contributes a new theory, data, and non-canonical case explanations to the literature. Its focus on national decisions in an important but understudied context introduces new evidence, narratives, and coverage of events that are not present in the extant literature.

Egypt was an advocate for the NPT because its leaders believed the treaty would constrain Israel, its chief regional rival. While Egypt quickly signed the NPT in 1968, it held out on ratification until 1981 due to disappointment at Israel's rejection of the accord. My dissertation shows that Cairo's main motivation for reversing course was not nuclear power reactor acquisition, as previous studies have suggested. Rather, the Camp David Accords of 1978 were pivotal in setting the stage for dissipation of the perceived Israeli security threat. Egyptian leaders also believed—incorrectly—at the time that Israel might soon accede to the NPT. Anger at the continued rejection of the treaty and revitalized fears of Jerusalem's arsenal shaped Egyptian behavior toward the CTBT. While Cairo signed the test

ban as an advocate in 1996, to this day it has yet to ratify the accord, which has not entered into force.

Romania was a subordinate that objected to the NPT but was pressured into endorsing it by the Soviet Union. Bucharest viewed the treaty as an unequal agreement and fought hard to spoil its negotiation. Conventional accounts hold that Romanian officials changed their minds and signed the treaty in 1968 once opposing it became futile, and ratified in 1970 to obtain civilian nuclear energy. But the dissertation indicates that, behind the scenes, the USSR and the other members of the Warsaw Pact threatened to isolate and abandon the Romanians. Though the Soviets allowed Romania to dissent to some communist initiatives related to economics, Bucharest's NPT stance was a bridge too far. In the end, Romania signed the treaty on the day it opened for signature. Commitment signaling followed in 1970, with ratification occurring once it became clear that the Soviets would continue to provide security to Bucharest. Romania would not fall victim to an invasion like other Warsaw Pact states that desired autonomy. Since Romania had already legally forsworn nuclear weapons and faced no serious security threats, CTBT signature (1996) and ratification (1999) were merely pro forma matters.

Brazil was a status dissenter to the NPT for over 30 years. Leaders in Brasília were unhappy with the balance of power codified by the treaty and its prohibitions on nuclear explosions for peaceful purposes. When Brazil finally reversed course and acceded in 1998, many observers attributed the decision to the country's process of democratization that had begun in the 1980s. However,

my research demonstrates that regime type was not determinative. The main causal drivers were the autonomous mastery of the nuclear fuel cycle and changing global perceptions of the NPT. Holdouts now incurred status costs reserved for suspected proliferators. Joining the treaty under these conditions would enhance Brazil's status while also allowing the state to maintain a latent nuclear capability. This new set of circumstances finally enabled joint signaling through accession. Though Brasília also ratified the CTBT in 1998, the test ban was a less controversial agreement. Brazil had already given up its quest for autonomous PNEs as scientific studies showed their lack of utility, allowing the country to sign the CTBT as an advocate on the day it opened for signature: September 24, 1996.

Japan was a weapons dissenter and did not sign the NPT when it opened for signature in 1968, despite the powerful legacy of Hiroshima and Nagasaki. Instead, Tokyo took until 1970 to preliminarily study the feasibility of developing its own nuclear arsenal. Japanese leaders decided that U.S. extended deterrence was a better arrangement for the country. Regardless, ratification did not occur until 1976, when further studies, internal discussions, and especially, robust U.S. assurances allowed Tokyo to finally forswear the bomb. Although some studies have pointed to non-nuclear norms and safeguards considerations as the key enablers of this commitment signal, I find otherwise. I argue that security was the primary driver. As with other states that ratified the NPT, signing and ratifying the CTBT—in 1996 and 1997—were not difficult for Tokyo.

### Implications for the Scholarly Literature

This dissertation has several implications for the academic study of nuclear politics. It offers insights into the phenomenon of why advanced nuclear states forswear nuclear weapons in a legally binding manner. Much of the scholarship during the ongoing renaissance in nuclear security studies has illuminated different causes and consequences of nuclear proliferation. The present study, however, focuses on a different but related dependent variable. Reasons why states decide not to pursue nuclear weapons at a given time do not fully explain decisions to legally rule out the nuclear option. My dissertation offers a first theory explaining this hand-tying phenomenon through its investigation of state entry into multilateral nuclear arms control treaties. Hopefully, its subject matter focus also helps to build bridges between the vibrant ongoing study of nuclear proliferation and arms control, a policy field that continues to progress even with relatively limited academic input.

My examination of this topic contributes to literature in international relations by disaggregating arms control treaty entry into a two-step process. As the dissertation makes explicit, signature and ratification often have different underlying motivations. Previous scholarship studying one step or the other usually views arms control treaty membership through an inaccurate binary lens: participation in a treaty or not. Additionally, the logic of type, commitment, and joint signaling has application to broader phenomena outside the nuclear domain. The substantive rationales behind such signals will likely vary based on the nature of the agreement—human rights, environment, trade, etc.—while still conforming to



this dissertation's main theoretical logic. The difference between multilateral nuclear arms control and these other areas is the legal forswearing of nuclear weapons. While studies on other topics have argued that joining international agreements is "cheap talk," I demonstrate that arms control decision-making is costly. Both signature and ratification carry such costs. For this reason, delays between when a treaty opens for signature, when states sign, and when states ratify are common among advanced nuclear countries.

Next, it is instructive to recall that the study of nuclear proliferation now contains many security-based explanations for state pursuit of the bomb. The bilateral arms control literature is moving in this direction, transcending solely cooperative explanations for treaty behavior. But the multilateral literature, on the other hand, remains focused on norms, treaty-contingent benefits, and domestic politics. I show with causal process observations that these previous explanations may certainly matter in some cases of entry into treaties, but security matters more. In fact, credible protection against serious security threats is a prerequisite to the commitment signaling of ratification. For non-signatory weapons dissenters, security is also the key element motivating their type signaling of dissatisfaction.

I derive my arguments from careful historical analysis of four states' behavior with respect to signing, ratifying, and/or acceding to the NPT and CTBT. In doing so, I introduce new data to the literature. These data are three-fold. First, I discuss many historical archival documents associated with the pre-negotiation, negotiation, and post-negotiation phases of arms control, covering events and national narratives not addressed in the literature. Second, I refer to documents

that likewise reveal insights into national debates over the phenomena of type and commitment signaling on nuclear arms control. Third, I provide data from original elite interviews I conducted in order to provide further context and perspectives to scholarly discussions. In sum, these data are a contribution to the historical coverage of the literature by themselves, independent of my theory. They also enable me to interrogate dominant explanations regarding several case studies, yielding new narratives and understandings.

This dissertation leaves room for further contributions to the literature. In the future, researchers could improve scholarly understanding of many additional states by focusing on their arms control signaling behavior. Such studies could produce further refinement of the theoretical types I introduce.

Another interesting puzzle that remains to be studied is the logic of decisions by those states that lie outside the dissertation's scope conditions. Many small states like Andorra, Guyana, Namibia, and Saint Kitts and Nevis did not sign the NPT before its entry-into-force, acceding decades later. It is true that most of the time such states did not view nuclear arms control issues as a priority, and they were subject to limited or no pressure from great powers to engage in the signaling game of nuclear diplomacy. Regardless, a systematic study of small states' arms control behavior would be quite useful. Proponents of the new TPNW believe that the participation of these states is essential to create strong disarmament and nonproliferation norms.

Additionally, signaling is by its nature a multi-party phenomenon with senders and receivers. Whether arms control signaling is effective and interpreted

properly is outside the scope of the dissertation. The case studies discussed herein show examples of times when such signaling succeeded as intended and times when signaling failed. A key area of future research would be for scholars to investigate how a state's allies and adversaries, and neutral third-parties, interpret arms control type, commitment, and joint signals. As I show below, misperception can have marked policy implications since the game of arms control involves multiple state types. For instance, a state that rejects a treaty for reasons of status could face consequences if its interlocutors believe its motivations stem from a desire to nuclearize.

### The Future of Global Nuclear Diplomacy

In addition to the dissertation project's scholarly contributions, it offers four important lessons for policy-makers. It also has ramifications for the TPNW, a treaty that may have monumental effects on future nuclear diplomacy. I describe each of these areas below.

First, the differential levels of engagement with arms control revealed by my research matter for understanding nuclear forbearance. Policy-makers should not assume that a state's signature of a multilateral nuclear arms control treaty means that it has ruled out the nuclear option.<sup>401</sup> As my research shows, the type signaling of signature carries considerably less weight than the commitment signaling of ratification. Incidents of treaty non-compliance or withdrawal by countries that have commitment signaled are relatively rare due to the associated

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<sup>401</sup> I find this to be the case even for some States Parties to the Vienna Convention on the Law of Treaties, which forbids signatories from taking actions to undermine the core purpose of an agreement before their ratification.

costs and expected punishments. However, my work clearly indicates that it is not uncommon for states to continue studying and even pursuing the nuclear option after signing a treaty. Ratification sets the course of a state's nuclear policy much more firmly than signature does.

Second, a related conclusion is that it would be unwise to assume that not signing necessarily implies an intent to proliferate. Treaty non-signatories come in two varieties: status dissenters and weapons dissenters. Status dissenters are more focused on how distributions of power enshrined by treaties affect their presence on the international stage than they are on possessing the weapons themselves. Likewise, when a leader says a treaty is unfair or discriminatory for permitting some states to have military or civilian nuclear capabilities, but not others, this does not automatically equate to an acquisition plan. Weapons dissenters may wish to have time to consider the nuclear option, which again, is not by default the same thing as nuclear pursuit. Nuclearization is an expensive, time-consuming process. Feasibility studies are just as—if not more—likely to lead to forbearance as they are to lead to attempted nuclear proliferation.

Third, both of the above reflections point to the imperative to carefully interpret arms control treaty signaling given potential heterogeneity. One-size-fits-all policy solutions may carry counterproductive consequences. For example, sanctioning a status dissenter for refusing to sign a treaty might only serve to prolong that state's timeline to embrace the accord.

Fourth, security is paramount in ratification commitment signaling decisions to legally forswear nuclear weapons. Sticks and carrots packages

focusing on elements like economic sanctions are unlikely to be impactful since national survival is at stake. Instead, proponents of arms control should consider options for mitigating serious security threats. This can occur through bilateral side negotiations, pledges of credible protection by a third-party patron, or threats of abandonment by a third-party patron that outweigh the benefits of potential nuclearization. The logic discussed above matters as far as achieving the entry-into-force of the CTBT, the universalization of the NPT, and the realization of a future FMCT or MENWFZ.

Finally, since I began working on this dissertation, 122 states negotiated the adoption of the TPNW at the UNGA.<sup>402</sup> The Nuclear Ban Treaty “outlaws all activities related to nuclear weapons: building them, possessing them, testing them and threatening their use (Gibbons and Herzog 2020).” Predictably, the agreement has created a great divide between nuclear-armed states and their allies, on one hand, and states that lack nuclear umbrella guarantees on the other (Potter 2017; Gibbons 2018; Ritchie and Egeland 2018). Ban advocates also seek to turn the publics of the former group against nuclear weapons by stigmatizing the bomb (Mekata 2018). Polls already show that 65 percent of Americans (Herzog, Baron, and Gibbons 2021) and 75 percent of Japanese may support the treaty (Baron, Herzog, and Gibbons 2020). The TPNW entered into force on January 22, 2021, after achieving 50 ratifications. Its impact remains to be seen, but the treaty

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<sup>402</sup> Treaty on the Prohibition of Nuclear Weapons, A/CONF.229/2017/8 (7 July 2017).

has the potential to create sharp, lasting divisions in nuclear diplomacy, which will almost inevitably manifest at the August 2021 NPT Review Conference.<sup>403</sup>

My process-based theory has implications for the future of the TPNW. Most importantly, an immediate ban on nuclear weapons would represent a very different balance of power than that reified by the NPT and the CTBT. Due to the lack of timeframe and concrete measures specified in NPT Article VI on nuclear disarmament, these treaties have somewhat of a freezing effect on global nuclear power. If the objectives of the TPNW were realized, the shift in the status quo would be remarkably more dramatic than that of the NPT or CTBT. For this reason, my theory would predict that many advanced nuclear states will continue to be non-signatories for years to come. The balance of power represented by the Ban Treaty will almost surely lead the NWS and the NNWS with nuclear umbrella protection to be long-term weapons dissenters.

Weapons dissenters to the TPNW will not be able to type signal as advocates until their perceptions of nuclear weapons and the Ban Treaty's resultant balance of power change. This might take a long time. For example, after the accord's negotiation, American, British, and French officials released a press statement chastising it and saying, "We do not intend to sign, ratify or ever become party to" the TPNW (qtd. in Gibbons 2019, p. 30). The other nuclear-armed states followed suit, with their allies quickly falling in line. While the Ban Treaty may stoke divisions between states and begin to create foundations of a nuclear non-

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<sup>403</sup> NPT Review Conferences have occurred every five years since 1975, but the 2020 conference was pushed back to 2021 due to the COVID-19 pandemic.

possession norm, this dissertation's theory predicts that global near-universality is unlikely to occur anytime soon.

## **Bibliography**

### Elite Interviews

- Akiyama, Nobumasa. 2016. Interview by author. Tokyo. March 17.
- Azambuja, Marcos Castrioto de. 2017. Interview by author. Rio de Janeiro. August 15.
- Barreiro, Selma Chi. 2017. Interview by author. Rio de Janeiro. August 14.
- Câmara, Marcelo Paz Saraiva. 2017. Interview by author. Brasília. August 17.
- Cardoso, Fernando Henrique. 2019. Interview by author. São Paulo. August 6.
- Castro Neves, Luiz Augusto de. 2017. Interview by author. Rio de Janeiro. August 10.
- Dalaqua, Renata Hessman. 2017. Interview by author. Rio de Janeiro. August 14.
- Dawood, Layla. 2019. Interview by author. Rio de Janeiro. August 2.
- Duarte, Sérgio de Queiroz. 2017. Interview by author. Belo Horizonte. August 8.
- Fausto, Sergio. 2019. Interview by author. São Paulo. August 16.
- Goldemberg, José. 2019. Interview by author. São Paulo. August 5.
- Graham, Thomas. 2020. Interview by author. Via Zoom videoconference. June 23.
- Herz, Mônica. 2019. Interview by author. Rio de Janeiro. July 31.
- Hikotani, Takako. 2016. Interview by author. Yokosuka. March 24.
- Hiwatari, Yumi. 2016. Interview by author. Tokyo. March 22.
- Hori, Masato. 2016. Interview by author. Tokai-mura. March 23.
- Ichimasa, Sukeyuki. 2016. Interview by author. Tokyo. March 15.



Iwata, Shuichiro. 2016. Interview by author. Yokosuka. March 24.

Kokaji, Lisa. 2016. Interview by author. Tokai-mura. March 23.

Kurita, Masahiro. 2016. Interview by author. Tokyo. March 15.

Marzo, Marco. 2019. Interview by author. Rio de Janeiro. August 1.

Mourão, Santiago Irazabal. 2019. Interview by author. Brasília. August 8.

Naoi, Yosuke. 2016. Interview by author. Tokai-mura. March 23.

Nascimento Plum, Mariana Oliveira do. 2019. Interview by author. Brasília. August 9.

Nishida, Michiru. 2016. Interview by author. Tokyo. March 24.

Patti, Carlo. 2019. Interview by author. Goiânia. August 7.

Ramalho, Antonio Jorge. 2017. Interview by author. Brasília. August 17.

Rosemberg, José. 2019. Interview by author. New York. October 22.

Sakamoto, Toyomi. 2016. Interview by author. Tokyo. March 17.

Solmesky, Sergio. 2017. Interview by author. Rio de Janeiro. August 14.

Spektor, Matias. 2019. Interview by author. São Paulo. August 13.

Tanaka, Kiwako. Interview by author. Tokyo. March 15.

Vaea, Darlene Atuamua Hakeifalehaakili. 2018. Interview by author. Vienna. May 30.

Vinhas, Laércio Antonio. Interview by author. São Paulo. August 14.

Viola, Eduardo. 2017. Interview by author. Brasília. August 18.

Yonezawa, Chushiro. 2016. Interview by author. Tokyo. March 17.

Zerbo, Lassina. 2019. Interview by author. Vienna. April 10.

### Archives and Libraries

Central Intelligence Agency (CIA). Freedom of Information Act (FOIA) Electronic Reading Room. <https://www.cia.gov/readingroom/>.

Diplomatic Archives of the Ministry of Foreign Affairs. Tokyo.

Getúlio Vargas Foundation (FGV). Center for Research and Documentation of Contemporary History of Brazil (CPDOC) Archives. Rio de Janeiro.

Legislative Records of the Japanese Diet. <https://kokkai.ndl.go.jp/>.

National Security Archives. The George Washington University. Washington, DC.

Swiss Federal Institute of Technology in Zurich (ETH Zurich). Center for Security Studies. Parallel History Project (PHP) on Cooperative Security. Warsaw Pact Records Collection.  
<http://www.php.isn.ethz.ch/lory1.ethz.ch/collections/colltopic5bb7.html>.

United Nations Digital Library. Conference on Disarmament.  
<https://digitallibrary.un.org/>.

United Nations Geneva Archives. Geneva.

University of Michigan Digital Library. Eighteen-Nation Committee on Disarmament. <https://quod.lib.umich.edu/e/endc/>.

Woodrow Wilson Center. History and Public Policy Program Digital Archive.  
<https://digitalarchive.wilsoncenter.org>.

### Document Collections

*Foreign Relations of the United States, 1946, Volume I, General; the United Nations*, eds. Ralph R. Goodwin, Neal H. Petersen, Marvin W. Kranz, and William Slany (Washington, DC: U.S. Government Printing Office, 1972).  
<https://history.state.gov/historicaldocuments/frus1946v01>.

*Foreign Relations of the United States*, 1946, Volume VIII, *The Far East*, eds. John G. Reid and Hebert A. Fine (Washington, DC: U.S. Government Printing Office, 1971). <https://history.state.gov/historicaldocuments/frus1946v08>.

*Foreign Relations of the United States*, 1947, Volume I, *General; The United Nations*, eds. Ralph R. Goodwin, Neal H. Petersen, Marvin W. Kranz, and William Slany (Washington, DC: U.S. Government Printing Office, 1973). <https://history.state.gov/historicaldocuments/frus1947v01>.

*Foreign Relations of the United States*, 1947, Volume VI, *The Far East*, ed. John G. Reid (Washington, DC: U.S. Government Printing Office, 1972). <https://history.state.gov/historicaldocuments/frus1947v06>.

*Foreign Relations of the United States*, 1948, Volume I, Part II, *General; the United Nations*, eds. Neal H. Petersen, Ralph R. Goodwin, Marvin W. Kranz, and William Slany (Washington, DC: U.S. Government Printing Office, 1976). <https://history.state.gov/historicaldocuments/frus1948v01p2>.

*Foreign Relations of the United States*, 1949, Volume I, *National Security Affairs; Foreign Economic Policy*, eds. Neal H. Petersen, Ralph R. Goodwin, William Z. Slany, and Marvin W. Kranz (Washington, DC: U.S. Government Printing Office, 1976). <https://history.state.gov/historicaldocuments/frus1949v01>.

*Foreign Relations of the United States*, 1950–1955, *The Intelligence Community, 1950–1955*, eds. Douglas Kane and Michael Warner (Washington, DC: U.S. Government Printing Office, 2007). <https://history.state.gov/historicaldocuments/frus1950-55Intel>.

*Foreign Relations of the United States*, 1951, Volume I, *National Security Affairs; Foreign Economic Policy*, eds. Neal H. Petersen, Harriet D. Schwar, Carl N. Raether, John A. Bernbaum, and Ralph R. Goodwin. (Washington, DC: U.S. Government Printing Office, 1979). <https://history.state.gov/historicaldocuments/frus1951v01>.

*Foreign Relations of the United States*, 1952–1954, Volume II, Part I, *National Security Affairs*, eds. Lisle A. Rose and Neal H. Petersen (Washington, DC: U.S. Government Printing Office, 1984). <https://history.state.gov/historicaldocuments/frus1952-54v02p1>.

*Foreign Relations of the United States, 1952–1954, Volume II, Part II, National Security Affairs*, eds. Lisle A. Rose and Neal H. Petersen (Washington, DC: U.S. Government Printing Office, 1984).

<https://history.state.gov/historicaldocuments/frus1952-54v02p2>.

*Foreign Relations of the United States, 1952–1954, Volume III, United Nations Affairs*, ed. Ralph R. Goodwin (Washington, DC: U.S. Government Printing Office, 1979). <https://history.state.gov/historicaldocuments/frus1952-54v03>.

*Foreign Relations of the United States, 1952–1954, Volume XII, Part I, East Asia and the Pacific*, ed. David W. Mabon (Washington, DC: U.S. Government Printing Office, 1984).

<https://history.state.gov/historicaldocuments/frus1952-54v12p1>.

*Foreign Relations of the United States, 1952–54, Volume XIV, Part II, China and Japan*, eds. David W. Mabon and Harriet D. Schwar (Washington, DC: U.S. Government Printing Office, 1985).

<https://history.state.gov/historicaldocuments/frus1952-54v14p2>.

*Foreign Relations of the United States, 1955–1957, Volume IX, Foreign Economic Policy; Foreign Information Program*, eds. Herbert A. Fine, Ruth Harris, and William F. Sanford, Jr. (Washington, DC: U.S. Government Printing Office, 1987). <https://history.state.gov/historicaldocuments/frus1955-57v09>.

*Foreign Relations of the United States, 1955–1957, Volume XI, United Nations and General International Matters*, ed. Lisle A. Rose (Washington, DC: U.S. Government Printing Office, 1988).

<https://history.state.gov/historicaldocuments/frus1955-57v11>.

*Foreign Relations of the United States, 1955–1957, Volume XX, Regulation of Armaments; Atomic Energy*, ed. David S. Patterson (Washington, DC: U.S. Government Printing Office, 1990).

<https://history.state.gov/historicaldocuments/frus1955-57v20>.

*Foreign Relations of the United States, 1955–1957, Volume XXIII, Part I, Japan*, ed. David W. Mabon (Washington, DC: U.S. Government Printing Office, 1991). <https://history.state.gov/historicaldocuments/frus1955-57v23p1>.

*Foreign Relations of the United States, 1955–1957, Volume XXV, Eastern Europe*, eds. Edward C. Keefer, Ronald D. Landa, and Stanley Shaloff (Washington, DC: U.S. Government Printing Office, 1990).

<https://history.state.gov/historicaldocuments/frus1955-57v25>.

*Foreign Relations of the United States, 1958–1960, Volume III, National Security Policy; Arms Control and Disarmament* (Washington, DC: U.S. Government Printing Office, 1996).

<https://history.state.gov/historicaldocuments/frus1958-60v03>.

*Foreign Relations of the United States, 1958–1960, Volume X, Part I, Eastern Europe Region; Soviet Union; Cyprus*, eds. Ronald D. Landa, James E. Miller, David S. Patterson, and Charles S. Sampson (Washington, DC: U.S. Government Printing Office, 1993).

<https://history.state.gov/historicaldocuments/frus1958-60v10p1>.

*Foreign Relations of the United States, 1958–1960, Volume X, Part II, Eastern Europe; Finland; Greece; Turkey*, eds. Ronald D. Landa, James E. Miller, William F. Sanford, Jr., and Sherill Brown Wells (Washington, DC: U.S. Government Printing Office, 1993).

<https://history.state.gov/historicaldocuments/frus1958-60v10p2>.

*Foreign Relations of the United States, 1958–1960, Volume XVIII, Japan; Korea*, eds. Madeline Chi and Louis J. Smith (Washington, DC: U.S. Government Printing Office, 1991).

<https://history.state.gov/historicaldocuments/frus1958-60v18>.

*Foreign Relations of the United States, 1961–1963, Volume VII, Arms Control and Disarmament*, eds. David W. Mabon and David S. Patterson (Washington, DC: U.S. Government Printing Office, 1995).

<https://history.state.gov/historicaldocuments/frus1961-63v07>.

*Foreign Relations of the United States, 1961–1963, Volumes VII, VIII, IX, Arms Control; National Security Policy; Foreign Economic Policy, Microfiche Supplement*, eds. Evans Gerakas, David W. Mabon, David S. Patterson, William F. Sanford, Jr., and Carolyn B. Yee (Washington, DC: U.S. Government Printing Office, 1997).

<https://history.state.gov/historicaldocuments/frus1961-63v07-09mSupp>.

*Foreign Relations of the United States, 1961–1963, Volume XXII, Northeast Asia*, eds. Edward C. Keefer, David W. Mabon, and Harriet Dashiell Schwar (Washington, DC: U.S. Government Printing Office, 1996).  
<https://history.state.gov/historicaldocuments/frus1961-63v22>.

*Foreign Relations of the United States, 1964–1968, Volume X, National Security Policy*, ed. David S. Patterson (Washington, DC: U.S. Government Printing Office, 2001). <https://history.state.gov/historicaldocuments/frus1964-68v10>.

*Foreign Relations of the United States, 1964–1968, Volume XI, Arms Control and Disarmament*, eds. Evans Gerakas, David S. Patterson, and Carolyn B. Yee (Washington, DC: U.S. Government Printing Office, 1997).  
<https://history.state.gov/historicaldocuments/frus1964-68v11>.

*Foreign Relations of the United States, 1964–1968, Volume XIII, Western Europe Region*, ed. Charles S. Sampson. (Washington, DC: U.S. Government Printing Office, 1995).  
<https://history.state.gov/historicaldocuments/frus1964-68v13>.

*Foreign Relations of the United States, 1964–1968, Volume XIV, Soviet Union*, eds. David C. Humphrey and Charles S. Sampson (Washington, DC: U.S. Government Printing Office, 2001).  
<https://history.state.gov/historicaldocuments/frus1964-68v14>.

*Foreign Relations of the United States, 1964–1968, Volume XV, Germany and Berlin*, ed. James E. Miller (Washington, DC: U.S. Government Printing Office, 1999). <https://history.state.gov/historicaldocuments/frus1964-68v15>.

*Foreign Relations of the United States, 1964–1968, Volume XVII, Eastern Europe*, ed. James E. Miller (Washington, DC: U.S. Government Printing Office, 1996). <https://history.state.gov/historicaldocuments/frus1964-68v17>.

*Foreign Relations of the United States, 1964–1968, Volume XVIII, Arab–Israeli Dispute, 1964–1967*, ed. Harriet Dashiell Schwar (Washington, DC: U.S. Government Printing Office, 2000).  
<https://history.state.gov/historicaldocuments/frus1964-68v18>.

*Foreign Relations of the United States, 1964–1968, Volume XXIX, Part 2, Japan*, ed. Karen L. Gatz (Washington, DC: U.S. Government Printing Office, 2006). <https://history.state.gov/historicaldocuments/frus1964-68v29p2>.

*Foreign Relations of the United States, 1969–1976, Volume XVI, Soviet Union, August 1974–December 1976*, ed. David C. Geyer (Washington, DC: U.S. Government Printing Office, 2012).  
<https://history.state.gov/historicaldocuments/frus1969-76v16>.

*Foreign Relations of the United States, 1969–1976, Volume XIX, Part 2, Japan, 1969–1972*, ed. David P. Nickels (Washington, DC: U.S. Government Printing Office, 2018).  
<https://history.state.gov/historicaldocuments/frus1969-76v19p2>.

*Foreign Relations of the United States, 1969–1976, Vol. XXV, Arab–Israeli Crisis and War, 1973*, eds. Nina Howland and Craig Daigle (Washington, DC: U.S. Government Printing Office, 2011).  
<https://history.state.gov/historicaldocuments/frus1969-76v25>.

*Foreign Relations of the United States, 1969–1976, Volume XXIX, Eastern Europe; Eastern Mediterranean, 1969–1972*, eds. James E. Miller, Douglas E. Selvage, and Laurie Van Hook (Washington, DC: U.S. Government Printing Office, 2007).  
<https://history.state.gov/historicaldocuments/frus1969-76v29>.

*Foreign Relations of the United States, 1969–1976, Volume E-2, Documents on Arms Control and Nonproliferation, 1969–1972*, eds. David I. Goldman, and David C. Humphrey (Washington, DC: U.S. Government Printing Office, 2007). <https://history.state.gov/historicaldocuments/frus1969-76ve02>.

*Foreign Relations of the United States, 1969–1976, Volume E-11, Part II, Documents on South America, 1973–1976*, eds. Sara Berndt, Halbert Jones, and James Siekmeier (Washington, DC: U.S. Government Printing Office, 2015). <https://history.state.gov/historicaldocuments/frus1969-76ve11p2>.

*Foreign Relations of the United States, 1969–1976, Volume E-14, Part II, Documents on Arms Control and Nonproliferation, 1973–1976*, eds. Kristin L. Ahlberg, Bonnie Sue Kim, and Chris Tudda (Washington, DC: U.S. Government Printing Office, 2015).

<https://history.state.gov/historicaldocuments/frus1969-76ve14p2>.

*Foreign Relations of the United States, 1969–1976, Volume E-15, Part I, Documents on Eastern Europe, 1973–1976*, ed. Peter Kraemer (Washington, DC: U.S. Government Printing Office, 2008).

<https://history.state.gov/historicaldocuments/frus1969-76ve15p1>.

*Foreign Relations of the United States, 1969–1976, Volume E-15, Part II, Documents on Western Europe, 1973–1976*, ed. Kathleen B. Rasmussen (Washington, DC: U.S. Government Printing Office, 2014).

<https://history.state.gov/historicaldocuments/frus1969-76ve15p2>.

*Foreign Relations of the United States, 1977–1980, Volume III, Foreign Economic Policy*, Kathleen B. Rasmussen (Washington, DC: U.S. Government Printing Office, 2013).

<https://history.state.gov/historicaldocuments/frus1977-80v03>.

*Foreign Relations of the United States, 1977–1980, Volume IX, Arab–Israeli Dispute, August 1978–December 1980*, 2nd rev. ed., ed. Alexander R. Wieland (Washington, DC: U.S. Government Printing Office, 2018).

<https://history.state.gov/historicaldocuments/frus1977-80v09Ed2>.

*Foreign Relations of the United States, 1977–1980, Volume XXVI, Arms Control and Nonproliferation*, ed. Chris Tudda (Washington, DC: U.S. Government Printing Office, 2015).

<https://history.state.gov/historicaldocuments/frus1977-80v26>.

*Foreign Relations of the United States, 1981–1988, Volume XIII, Conflict in the South Atlantic, 1981–1984*, ed. Alexander R. Wieland (Washington, DC: U.S. Government Printing Office, 2015).

<https://history.state.gov/historicaldocuments/frus1981-88v13>.

National Security Archive, “Japan and the United States: Diplomatic, Security, and Economic Relations, Part I, 1960–1976,” Digital National Security Archive Document Set, ed. Robert Wampler. Washington, DC: The George Washington University. N.d. Proquest.

National Security Archive, Electronic Briefing Book 253: “‘The Impulse towards a Safer World’ 40th Anniversary of the Nuclear Nonproliferation Treaty,” ed.



William Burr. Washington, DC: The George Washington University. July 1, 2008. <https://nsarchive2.gwu.edu/nukevault/ebb253/>.

National Security Archive, Electronic Briefing Book 559. "Did Nixon Even Read the CIA's Daily Briefs?," ed. William Burr. Washington, DC: The George Washington University. September 14, 2016. <https://nsarchive.gwu.edu/briefing-book/intelligence/2016-09-14/did-nixon-even-read-cias-daily-briefs>.

National Security Archive, Electronic Briefing Book 622. "The Nuclear Nonproliferation Treaty and the German Nuclear Question Part II, 1965–1969," ed. William Burr. Washington, DC: The George Washington University. March 21, 2018. <https://nsarchive.gwu.edu/briefing-book/nuclear-vault/2018-03-21/nuclear-nonproliferation-treaty-german-nuclear-question-part-ii-1965-1969>.

National Security Archive, Electronic Briefing Book 629: "The Nuclear Non-Proliferation Treaty and the Mexican Amendments: The Negotiation Record," ed. William Burr. Washington, DC: The George Washington University. May 24, 2018. <https://nsarchive.gwu.edu/briefing-book/nuclear-vault/2018-05-24/nuclear-non-proliferation-treaty-mexican-amendments-negotiating-record>.

#### Published Primary and Secondary Sources

Abbott, Kenneth W., and Duncan Snidal. 2000. "Hard and Soft Law in International Governance." *International Organization* 54(3): 421–456.

Abe, Nobuyasu. 2020. "The NPT at Fifty: Successes and Failures." *Journal for Peace and Nuclear Disarmament* 3(2): 224–233.

Aberbach, Joel D., and Bert A. Rockman. 2002. "Conducting and Coding Elite Interviews." *PS: Political Science & Politics* 35(4): 673–676.

Aburish, Saïd K. 2004. *Nasser: The Last Arab: A Biography*. New York: St. Martin's Press.

Adelman, Kenneth L. 1984. "Arms Control With and Without Agreements." *Foreign Affairs* 63(2): 240–263.

- Adelman, Ken. 2014. *Reagan at Reykjavik: Forty-Eight Hours that Ended the Cold War*. New York: Harper Collins.
- Adeniji, Olu. 1995. "Security Assurances." In *The Future of the Non-Proliferation Treaty*, 98–108. Edited by John Simpson and Darryl Howlett. London: St. Martin's Press.
- Akimoto, Daisuke. 2020. *Japan's Nuclear Identity and Its Implications for Nuclear Abolition*. London: Palgrave Macmillan.
- Akiyama, Nobumasa, 2018. "Disarmament and the Non-Proliferation Policy of Japan." In *Routledge Handbook of Japanese Foreign Policy*, 173–187. Edited by Mary M. McCarthy. Abingdon-on-Thames, UK: Routledge.
- Alexiev, Alex. 1981. "Romania and the Warsaw Pact: The Defense Policy of a Reluctant Ally." *Journal of Strategic Studies* 4(1): 5–18.
- Aust, Anthony. 2010. *Handbook of International Law*. 2nd ed. Cambridge: Cambridge University Press.
- Aust, Anthony. 2013. *Modern Treaty Law and Practice*. 3rd ed. Cambridge: Cambridge University Press.
- Avenhaus, Rudolf, Morton Canty, D. Marc Kilgour, Bernhard von Stengel, and Shmuel Zamir. 1996. "Inspection Games in Arms Control." *European Journal of Operational Research* 90(3): 383–394.
- Bahgat, Gawdat. 2007. "Nuclear Proliferation: Egypt." *Middle Eastern Studies* 43(3): 409–421.
- Bar, Alon. 2010. "Israel and the CTBT." *Strategic Assessment* 13(2): 29–38.
- Bar-Joseph, Uri. 1982. "The Hidden Debate: The Formation of Nuclear Doctrines in the Middle East." *Journal of Strategic Studies* 5(2): 205–227.
- Barletta, Michael, 1997. "The Military Nuclear Program in Brazil," Working paper, Stanford University, Center for International Security and Arms Control. <https://fsi-live.s3.us-west-1.amazonaws.com/s3fs-public/barletta.pdf>.

- Barnaby, Frank. 1989. *The Invisible Bomb: The Nuclear Arms Race in the Middle East*. London: I. B. Tauris.
- Baron, Jonathon, Rebecca Davis Gibbons, and Stephen Herzog, 2020. "Japanese Public Opinion, Political Persuasion, and the Treaty on the Prohibition of Nuclear Weapons." *Journal for Peace and Nuclear Disarmament* 3(2): 299–309.
- Baron, Jonathon, and Stephen Herzog. 2020. "Public Opinion on Nuclear Energy and Nuclear Weapons: The Attitudinal Nexus in the United States." *Energy Research & Social Science* 68: 1–11.
- Bas, Muhammet A., and Andrew J. Coe. 2012. "Arms Diffusion and War." *Journal of Conflict Resolution* 56(4): 651–674.
- Bas, Muhammet A., and Andrew J. Coe. 2016. "A Dynamic Theory of Nuclear Proliferation and Preventive War." *International Organization* 70(4): 655–685.
- Bas, Muhammet A., and Andrew J. Coe. 2018. "Give Peace a (Second) Chance: A Theory of Nonproliferation Deals." *International Studies Quarterly* 62(3): 606–617.
- Bennett, Andrew, and Jeffrey T. Checkel, eds. 2015. *Process Tracing: From Metaphor to Analytic Tool*. Cambridge: Cambridge University Press.
- Berenji, Shahin. 2020. "Sadat and the Road to Jerusalem: Bold Gestures and Risk Acceptance in the Search for Peace." *International Security* 45(1): 127–163.
- Bergkvist, Nils-Olov, and Ragnhild Ferm. 2000. "Nuclear Explosions 1945–1998." Swedish Defence Research Agency and Stockholm International Peace Research Institute. Division of Systems and Underwater Technology Report, SE-172 90.  
<https://inis.iaea.org/collection/NCLCollectionStore/Public/31/060/31060372.pdf>.
- Betts, Richard K. 1992. "Systems for Peace or Causes of War? Collective Security, Arms Control, and the New Europe." *International Security* 17(1): 5–43.

- Betts, Richard K. 1999. "Universal Deterrence or Conceptual Collapse? Liberal Pessimism and Utopian Realism." In *The Coming Crisis: Nuclear Proliferation, U.S. Interests, and World Order*, 51–85. Edited by Victor A. Utgoff. Cambridge, MA: MIT Press.
- Bhatia, Shyam. 1988. *Nuclear Rivals in the Middle East*. New York: Routledge.
- Bleek, Philipp C. 2010a. *Does Proliferation Beget Proliferation? Why Nuclear Dominoes Rarely Fall*. Ph.D. diss., Georgetown University.
- Bleek, Philipp C. 2010b. "Why Do States Proliferate? Quantitative Analysis of the Exploration, Pursuit, and Acquisition of Nuclear Weapons," in *Forecasting Nuclear Proliferation in the 21st Century: Volume 1 The Role of Theory*, 159–92. Edited by William C. Potter and Gaukhar Mukhatzhanova. Stanford, CA: Stanford University Press.
- Bleek, Philipp C. 2017. "When Did (and Didn't) States Proliferate? Chronicling the Spread of Nuclear Weapons." Harvard University, Project on Managing the Atom. *Discussion Paper*. June.  
[https://www.belfercenter.org/sites/default/files/files/publication/When%20Did%20and%20Didn%27t%29%20States%20Proliferate%3F\\_1.pdf](https://www.belfercenter.org/sites/default/files/files/publication/When%20Did%20and%20Didn%27t%29%20States%20Proliferate%3F_1.pdf).
- Bleek, Philipp C., and Eric B. Lorber. 2013. "Security Guarantees and Allied Nuclear Proliferation." *Journal of Conflict Resolution* 58(3): 429–454.
- Blix, Hans. 1992. "Verification of Nuclear Nonproliferation: The Lesson of Iraq." *Washington Quarterly* 15(4): 57–65.
- Bloch, Marc. 1954. *The Historian's Craft*. Manchester: Manchester University Press.
- Boylan, Andrea K. 2018. *Nuclear Proliferation in the Middle East: In Pursuit of a Regional Logic*. Ph.D. diss., U.S. Naval Postgraduate School.
- Brands, Hal. 2007. "Non-Proliferation and the Dynamics of the Middle Cold War: The Superpowers, the MLF, and the NPT." *Cold War History* 7(3): 389–423.
- Braut-Hegghammer, Målfrid. 2011. "Revisiting Osirak: Preventive Attacks and Nuclear Proliferation Risks." *International Security* 36(1): 101–132.

- Braut-Hegghammer, Målfrid. 2016. *Unclear Physics: Why Iraq and Libya Failed to Build Nuclear Weapons*. Ithaca, NY: Cornell University Press.
- Brodie, Bernard. 1946a. "Implications for Military Policy." In *The Absolute Weapon: Atomic Power and World Order*, 70–107. Edited by Bernard Brodie. New York: Harcourt Brace.
- Brodie, Bernard. 1946b. "War in the Atomic Age." In *The Absolute Weapon: Atomic Power and World Order*, 21–69. Edited by Bernard Brodie. New York: Harcourt Brace.
- Brodie, Bernard. 1959. *Strategy in the Missile Age*. Princeton, NJ: Princeton University Press.
- Brodie, Bernard. 1966. *Escalation and the Nuclear Option*. Princeton, NJ: Princeton University Press.
- Brodie, Bernard. 1976. "On the Objectives of Arms Control." *International Security* 1(1): 17–36.
- Brown, Robert L. 2015. *Nuclear Authority: The IAEA and the Absolute Weapon*. Washington, DC: Georgetown University Press.
- Brown, Robert L., and Jeffrey M. Kaplow. 2014. "Talking Peace, Making Weapons: IAEA Technical Cooperation and Nuclear Proliferation." *Journal of Conflict Resolution* 58(2): 402–428.
- Buckley, Roger. 1998. *Japan Today*. Cambridge: Cambridge University Press.
- Budjeryn, Mariana. 2015. "The Power of the NPT: International Norms and Ukraine's Nuclear Disarmament." *Nonproliferation Review* 22(2): 203–237.
- Budjeryn, Mariana. 2016. *The Power of the NPT: International Norms and Nuclear Disarmament of Belarus, Kazakhstan and Ukraine, 1990–1994*. Ph.D. diss., Central European University.
- Bull, Hedley. 1961. *The Control of the Arms Race: Disarmament and Arms Control in the Missile Age*. London: Praeger.

- Bull, Hedley. 1976. "Arms Control and World Order." *International Security* 1(1): 3–16.
- Bunn, George. 1992. *Arms Control by Committee: Managing Negotiations with the Russians*. Stanford, CA: Stanford University Press.
- Bunn, George, and Roland M. Timerbaev. 1993. "Security Assurances to Non-Nuclear-Weapon States." *Nonproliferation Review* 1(1): 11–20.
- Burges, Sean W., and Fabricio H. Chagas Bastos. 2017. "The Importance of Presidential Leadership for Brazilian Foreign Policy." *Policy Studies* 38(3): 277–290.
- Cameron, James. 2017. *The Double Game: The Demise of America's First Missile Defense System and the Rise of Strategic Arms Limitation*. Oxford: Oxford University Press.
- Cameron, James. 2018. "Technology, Politics, and Development: Domestic Criticism of the 1975 Brazilian–West German Nuclear Agreement." *Revista Brasileira de Política Internacional* 61(2): 1–17.
- Cameron, James, and Or Rabinowitz. 2017. "Eight Lost Years? Nixon, Ford, Kissinger and the Non-Proliferation Regime, 1969–1977." *Journal of Strategic Studies* 40(6): 839–866.
- Campbell, Kurt M., and Tsuyoshi Sunohara. 2004. "Japan: Thinking the Unthinkable." In *The Nuclear Tipping Point: Why States Reconsider Their Nuclear Choices*, 218–253. Edited by Kurt M. Campbell, Robert J. Einhorn, and Mitchell B. Reiss. Washington, DC: Brookings Institution Press.
- Carasales, Julio C. 1995. "The Argentine–Brazilian Nuclear Rapprochement." *Nonproliferation Review* 2(3): 39–48.
- Carasales, Julio C. 1999. "The So-Called Proliferator That Wasn't: The Story of Argentina's Nuclear Policy." *Nonproliferation Review* 6(4): 51–64.
- Cardoso, Fernando Henrique. 2015. *Diários da Presidência: 1995–1996, Vol. 1*. São Paulo: Companhia das Letras.

- Cardoso, Fernando Henrique. 2016. *Diários da Presidência: 1997–1998, Vol. 2*. São Paulo: Companhia das Letras.
- Carnegie, Allison, and Austin Carson. 2019. “The Disclosure Dilemma: Nuclear Intelligence and International Organizations.” *American Journal of Political Science* 63(2): 269–285.
- Chant, Chris. 2013. *Air War in the Falklands 1982*. Oxford: Osprey.
- Coe, Andrew J., and Jane Vaynman. 2015. “Collusion and the Nuclear Nonproliferation Regime.” *Journal of Politics* 77(4): 983–997.
- Coe, Andrew J., and Jane Vaynman. 2020. “Why Arms Control is So Rare.” *American Political Science Review* 114(2): 342–355.
- Cohen, Avner. 1998. *Israel and the Bomb*. New York: Columbia University Press.
- Cohen, Avner. 2007. “Crossing the Threshold: The Untold Nuclear Dimension of the 1967 Arab–Israeli War and its Contemporary Lessons.” *Arms Control Today* 37(5): 12–16.
- Cole, Wade M. 2009. “Hard and Soft Commitments to Human Rights Treaties, 1966–2000.” *Sociological Forum* 24(3): 563–588.
- Collier, David. 2011. “Understanding Process Tracing.” *PS: Political Science & Politics* 44(4): 823–830.
- Committee on Reviewing and Updating Technical Issues Related to the Comprehensive Nuclear Test Ban Treaty. 2012. *The Comprehensive Nuclear Test Ban Treaty: Technical Issues for the United States*. National Research Council of the National Academies. Washington, DC: National Academies Press.
- Constantinescu, Emil. 2005. *Time of Tearing Down, Time of Building*. Bucharest: Universalia.
- Cooper Jr., John Milton. 2011. *Woodrow Wilson: A Biography*. New York: Vintage Books.

- Cooper, Tom. 2016. "Joyriding Egyptian Pilots Helped to Provoke the Six Day War with Israel." *War is Boring*. Medium. October. <https://medium.com/war-is-boring/joyriding-egyptian-pilots-helped-to-provoke-the-six-day-war-with-israel-c2db466aa48d>.
- Corbett, Michael. 2013. "Oil Shock of 1973–74." *Federal Reserve History*. Federal Reserve Bank of Boston. November. <https://www.federalreservehistory.org/essays/oil-shock-of-1973-74>.
- Costa Silva, Álvaro. 2020. "Diverse Images, Reverse Strategies: Brazilian Foreign Ministers' Perceptions and the Brazil–Argentina Rapprochement (1974–1985)." *Revista Brasileira de Política Internacional* 6(1): 1–20.
- Coutto, Tatiana. 2014. "An International History of the Brazilian–Argentine Rapprochement." *International History Review* 36(2): 302–323.
- Crump, Laurien. 2015. *The Warsaw Pact Reconsidered: International Relations in Eastern Europe, 1955–1969*. London: Routledge.
- Crump, Laurien, and Angela Romano. 2020. "Challenging the Superpower Straightjacket (1965–1975): Multilateralism as an Instrument of Smaller Powers." In *Margins for Manoeuvre in Cold War Europe: The Influence of Smaller Powers*, 12–31. Edited by Laurien Crump and Susanna Erlandsson. London: Routledge.
- Crump-Gabreëls, Laurien. 2017. "Nonproliferation Under Pressure: The Nuclear Debate Within the Warsaw Pact, 1965–1968." In *Negotiating the Nuclear Non-Proliferation Treaty: Origins of the Nuclear Order*, 97–115. Edited by Roland Popp, Liviu Horovitz, and Andreas Wenger. London: Routledge.
- Dahlman, Ola, Jenifer Mackby, Svein Mykkeltveit, and Hein Haak. 2011. *Detect and Deter: Can Countries Verify the Nuclear Test Ban?* Dordrecht, Netherlands: Springer.
- Dalaqua, Renata H. 2019. "'We Will Not Make the Bomb Because We Do Not Want to Make the Bomb': Understanding the Technopolitical Regime That Drives the Brazilian Nuclear Program." *Nonproliferation Review* 26(3–4): 231–249.



- Dawood, Layla, and Mônica Herz. 2013. "Nuclear Governance in Latin America." *Contexto Internacional* 35(2): 497–535.
- Debs, Alexandre, and Nuno P. Monteiro. 2014. "Known Unknowns: Power Shifts, Uncertainty, and War." *International Organization* 68(1): 1–31.
- Debs, Alexandre, and Nuno P. Monteiro. 2017. *Nuclear Politics: The Strategic Logic of Nuclear Proliferation*. Cambridge: Cambridge University Press.
- Debs, Alexandre, and Nuno P. Monteiro. 2018. "Cascading Chaos in Nuclear Northeast Asia." *Washington Quarterly* 41(1): 97–113.
- Debs, Alexandre, Stephen Herzog, and Nuno P. Monteiro. 2019. "Security Alliances and Fourth-Party Threat Leverage." Working paper, Yale University.
- Deletant, Dennis. 2006. *Hitler's Forgotten Ally. Ion Antonescu and His Regime, Romania 1940–1944*. Basingstoke, UK: Palgrave Macmillan.
- Deletant, Dennis. 2007. "'Taunting the Bear': Romania and the Warsaw Pact, 1963–89." *Cold War History* 7(4): 495–507.
- Deletant, Dennis, and Mihail Ionescu. 2004. "Romania and the Warsaw Pact: 1955–1989." Woodrow Wilson Center, Cold War International History Project. *Working Paper* 43.  
<https://www.wilsoncenter.org/sites/default/files/media/documents/publication/ACF368.pdf>.
- De Mesquita, Bruce Bueno, and William H. Riker. 1982. "An Assessment of the Merits of Selective Nuclear Proliferation." *Journal of Conflict Resolution* 26(2): 283–306.
- Downs, George W., and David M. Rocke. 1990. *Tacit Bargaining, Arms Races, and Arms Control*. Ann Arbor, MI: University of Michigan Press.
- Downs, George W., David M. Rocke, and Peter N. Barsoom. 1996. "Is the Good News About Compliance Good News About Cooperation?" *International Organization* 50(3): 379–406.

- Dragomir, Elena 2011. "The Perceived Threat of Hegemonism in Romania During the Second Détente." *Cold War History* 12(1): 111–134.
- Duarte, Sérgio de Queiroz. 2016. "Brazil and the Nonproliferation Regime: A Historical Perspective." *Nonproliferation Review* 23(5–6): 545–558.
- Duarte, Sérgio de Queiroz. 2017. "The Role of Brazil in Multilateral Disarmament Efforts." *Revista Brasileira de Política Internacional* 60(2): 1–22.
- Dunn, Lewis A. 2009. "The NPT: Assessing the Past, Building the Future." *Nonproliferation Review* 16(2): 143–172.
- Eden, Lynn. 2004. *Whole World on Fire: Organizations, Knowledge, and Nuclear Weapons Devastation*. Ithaca, NY: Cornell University Press.
- Einhorn, Robert J. 2004. "Egypt: Frustrated but Still on a Non-Nuclear Course." In *The Nuclear Tipping Point: Why States Reconsider Their Nuclear Choices*, 43–82. Edited by Kurt M. Campbell, Robert J. Einhorn, and Mitchell B. Reiss. Washington, DC: Brookings Institution Press.
- Elbahtimy, Hassan. 2018. "Missing the Mark: Dimona and Egypt's Slide into the 1967 Arab–Israeli War." *Nonproliferation Review* 25(5–6): 385–397.
- Elliott, Robert, and Ladislav Timulak. 2005. "Descriptive and Interpretive Approaches to Qualitative Research." In *A Handbook of Research Methods for Clinical and Health Psychology*, 147–159. Edited by Jeremy Miles and Paul Gilbert. Oxford: Oxford University Press.
- Endicott, John E. 1977. "The 1975–76 Debate over Ratification of the NPT in Japan," *Asian Survey* 17(3): 275–292.
- Epstein, William. 1977. "Why States Go—and Don't Go—Nuclear." *ANNALS of the American Academy of Political and Social Science* 430(1): 16–28.
- Ewell, Emily S. 1998. "NIS Nuclear Smuggling Since 1995: A Lull in Significant Cases?" *Nonproliferation Review* 5(3): 119–125.
- Fahmy, Nabil. 2020. *Egypt's Diplomacy in War, Peace and Transition*. London: Palgrave Macmillan.

- Fearon, James D. 1995. "Rationalist Explanations for War." *International Organization* 49(3): 379–414.
- Fearon, James D. 1997. "Signaling Foreign Policy Interests: Tying Hands Versus Sinking Costs." *Journal of Conflict Resolution* 41(1): 68–90.
- Fearon, James D. 1998. "Bargaining, Enforcement, and International Cooperation." *International Organization* 52(2): 269–305.
- Feldman, Shai. 1997. *Nuclear Weapons and Arms Control in the Middle East*. Cambridge, MA: MIT Press.
- Findlay, Trevor. 2015. "Proliferation Alert! The IAEA and Non-Compliance Reporting." Harvard University, Project on Managing the Atom. *Discussion Paper*. October.  
[https://www.belfercenter.org/sites/default/files/files/publication/proliferation\\_alert-web.pdf](https://www.belfercenter.org/sites/default/files/files/publication/proliferation_alert-web.pdf).
- Finnemore, Martha, and Kathryn Sikkink. 1998. "International Norm Dynamics and Political Change." *International Organization* 52(4): 887–918.
- Fischer, David A. V. 1995. "The 1995 NPT Conference: A Preliminary Review of the Issues." In *The Future of the Non-Proliferation Treaty*, 21–33. Edited by John Simpson and Darryl Howlett. London: St. Martin's Press.
- Flemes, Daniel. 2006. "Brazil's Nuclear Policy From Technological Dependence to Civil Nuclear Power." German Institute for Global and Area Studies. *Working Paper* 23. June.  
<https://www.econstor.eu/bitstream/10419/47866/1/605211248.pdf>.
- Frankel, Benjamin. 1993. "The Brooding Shadow: Systemic Incentives and Nuclear Weapons Proliferation." *Security Studies* 2(3–4): 37–78.
- Fuhrmann, Matthew. 2012a. *Atomic Assistance: How "Atoms for Peace" Programs Cause Nuclear Insecurity*. Ithaca, NY: Cornell University Press.
- Fuhrmann, Matthew. 2012b. "Splitting Atoms: Why do Countries Build Nuclear Power Plants?" *International Interactions* 38(1): 29–57.

- Fuhrmann, Matthew. 2017. "The Logic of Latent Nuclear Deterrence." Paper presented to the Annual Meeting of the American Political Science Association. San Francisco.  
<https://pdfs.semanticscholar.org/da10/92d95dbd16a89cee3ada882755698e6424e6.pdf>.
- Fuhrmann, Matthew, and Benjamin Tkach. 2015. "Almost Nuclear: Introducing the Nuclear Latency Dataset." *Conflict Management and Peace Science* 32(4): 443–461.
- Fuhrmann, Matthew, and Jeffrey D. Berejikian. 2012. "Disaggregating Noncompliance: Abstention Versus Predation in the Nuclear Nonproliferation Treaty." *Journal of Conflict Resolution* 56(3): 355–381.
- Fuhrmann, Matthew, and Todd S. Sechser. 2014. "Nuclear Strategy, Nonproliferation, and the Causes of Foreign Nuclear Deployments." *Journal of Conflict Resolution* 58(3): 455–480.
- Fuhrmann, Matthew, and Yonatan Lupu. 2016. "Do Arms Control Treaties Work? Assessing the Effectiveness of the Nuclear Nonproliferation Treaty." *International Studies Quarterly* 60(3): 530–539.
- Gall, Norman. 1976. "Atoms for Brazil: Dangers for All." *Bulletin of the Atomic Scientists* 32(6): 4–9.
- Gallicchio, Marc. 2001. "Occupation, Dominion, and Alliance: Japan in American Security Policy, 1945–1969." In *Partnership: The United States and Japan, 1951–2001*, 115–134. Edited by Iriye Akira and Robert A. Wampler. Tokyo: Kodansha International.
- Garthoff, Raymond L. 1995. "When and Why Romania Distanced Itself from the Warsaw Pact." *CWIHP Bulletin* 5: 111.
- Gartzke, Erik, and Matthew Kroenig. 2009. "A Strategic Approach to Nuclear Proliferation." *Journal of Conflict Resolution* 53(2): 151–160.
- Gavin, Francis J. 2012. *Nuclear Statecraft: History and Strategy in America's Atomic Age*. Ithaca, NY: Cornell University Press.

- George, Alexander L., and Andrew Bennett. 2005. *Case Studies and Theory Development in the Social Sciences*. Cambridge, MA: MIT Press.
- Gerges, Fawaz A. 2019. *Making the Arab World: Nasser, Qutb, and the Clash that Shaped the Middle East*. Princeton, NJ: Princeton University Press.
- Gerzhoy, Gene. 2015. "Alliance Coercion and Nuclear Restraint: How the United States Thwarted West Germany's Nuclear Ambitions." *International Security* 39(4): 91–129.
- Gheorghe, Rodica Eliza. 2012. "Romania's Nuclear Negotiations Postures in the 1960s. Client, Maverick and International Peace Mediator." Romanian Energy Center, Romanian Nuclear History Project, *Working Paper* 1.
- Gheorghe, Eliza. 2013a. "A Flash in the Pan: Romania and the NPT, 1968–1975." Paper presented to the University of Oxford IR Research Colloquium.
- Gheorghe, Eliza. 2013b. "Atomic Maverick: Romania's Negotiations for Nuclear Technology, 1964–1970." *Cold War History* 13(3): 373–392.
- Gheorghe, Eliza. 2013c. "How to Become a Customer: Lessons From the Nuclear Negotiations Between the U.S., Canada and Romania in the 1960s." Woodrow Wilson Center, Nuclear Proliferation International History Program. *Issue Brief* 2.  
[https://www.wilsoncenter.org/sites/default/files/media/documents/publication/npihp\\_issue\\_brief\\_2\\_us\\_canada\\_romania\\_nuclear\\_negotiations\\_1960s.pdf](https://www.wilsoncenter.org/sites/default/files/media/documents/publication/npihp_issue_brief_2_us_canada_romania_nuclear_negotiations_1960s.pdf).
- Gheorghe, Eliza. 2014a. *Atomic Politics: Romania's Cold War Nuclear Acquisition Strategy, 1962–1979*. Ph.D. diss., Oxford University.
- Gheorghe, Eliza. 2014b. "Building Detente in Europe? East–West Trade and the Beginnings of Romania's Nuclear Programme, 1964–70." *European Review of History* 21(2): 235–253.
- Gheorge, Eliza. 2018. "Peace for Atoms. US Non-Proliferation Policy and the Romanian Role in the Sino–American Rapprochement, 1969–1971." *International History Review* 40(5): 1049–1072.

- Gheorghe, Eliza. 2019. "Proliferation and the Logic of the Nuclear Market." *International Security* 43(4): 88–127.
- Gibbons, Rebecca Davis. 2016. *American Hegemony and the Politics of the Nuclear Nonproliferation Regime*. Ph.D. diss., Georgetown University.
- Gibbons, Rebecca Davis. 2018. "The Humanitarian Turn in Nuclear Disarmament and the Treaty on the Prohibition of Nuclear Weapons." *Nonproliferation Review* 25 (1–2): 11–36.
- Gibbons, Rebecca Davis. 2019. "Addressing the Nuclear Ban Treaty." *Washington Quarterly* 42(1): 27–40.
- Gibbons, Rebecca Davis. 2020. "Supply to Deny: The Benefits of Nuclear Assistance for Nuclear Nonproliferation." *Journal of Global Security Studies* 5(2): 282–298.
- Gibbons, Rebecca Davis, and Stephen Herzog. 2020. "75 years After Hiroshima, Here are 4 Things to Know About Nuclear Disarmament Efforts." *Washington Post*. Monkey Cage blog. August 6.  
<https://www.washingtonpost.com/politics/2020/08/06/75-years-after-hiroshima-bombing-here-are-4-things-know-about-nuclear-disarmament-efforts/>.
- Gibbons, Steven J., Frank Pabian, Sven Peter Näsholm, Tormod Kværna, and Svein Mykkeltveit. 2017. "Accurate Relative Location Estimates for the North Korean Nuclear Tests Using Empirical Slowness Corrections." *Geophysical Journal International* 208(1): 101–117.
- Glaser, Charles L. 2010. *Rational Theory of International Politics: The Logic of Competition and Cooperation*. Princeton, NJ: Princeton University Press.
- Glasstone, Samuel, and Phillip J. Dolan, eds. 1977. *The Effects of Nuclear Weapons*. Washington, DC: U.S. Department of Defense.
- Goertz, Gary, and Paul F. Diehl. 1993. "Enduring Rivalries: Theoretical Constructs and Empirical Patterns." *International Studies Quarterly* 37(2): 147–171.
- Gök, Rengin, Stephen Herzog, Keith Nakanishi, Michael E. Pasyanos, Rob J. Mellors, Arthur J. Rodgers, David B. Harris, and Eileen S. Vergino. 2012. "Lithospheric Models of the Middle East to Improve Seismic Source

Parameter Determination/Event Location Accuracy.” In *Proceedings of the 2012 Monitoring Research Review: Ground-Based Nuclear Explosion Monitoring Technologies*, Vol. 1, 23–30. Edited by Marvin A. Wetovsky. Albuquerque, NM: National Nuclear Security Administration and Air Force Research Laboratory.

Goldemberg, José. 2006. “Lessons From the Denuclearization of Brazil and Argentina.” *Arms Control Today* 36(3): 41–43.

Goldemberg, José, Carlos Feu Alvim, and Olga Y. Mafrá. 2018. “The Denuclearization of Brazil and Argentina.” *Journal for Peace and Nuclear Disarmament* 1(2): 383–403.

Goldemberg, José, and Harold A. Feiveson. 1994. “Denuclearization in Argentina and Brazil.” *Arms Control Today* 24(2): 10–14.

Goldsmith, Jack L., and Eric A. Posner. 2002. “Moral and Legal Rhetoric in International Relations: a Rational Choice Perspective.” *Journal of Legal Studies* 31(S1): S115–S139.

Graham Jr., Thomas. 2012. *Disarmament Sketches: Three Decades of Arms Control and International Law*. Seattle: University of Washington Press.

Gray, William Glenn. 2012. “Commercial Liberties and Nuclear Anxieties: The US–German Feud Over Brazil, 1975–7.” *International History Review* 34(3): 449–474.

Green, Michael J., and Katsushisa Furukawa. 2008. “Japan: New Nuclear Realism.” In *The Long Shadow: Nuclear Weapons and Security in 21st Century Asia*, 347–372. Edited by Muthiah Alagappa. Stanford, CA: Stanford University Press.

Gregory, Barbara M. 1995. “Egypt’s Nuclear Program: Assessing Supplier-Based and Other Developmental Constraints.” *Nonproliferation Review* 3(1): 20–27.

Güvenç, Serhat, and Soli Özel. 2012. “NATO and Turkey in the Post-Cold War World: Between Abandonment and Entrapment.” *Southeast European and Black Sea Studies* 12(4): 533–553.

- Haas, Melinda, and Keren Yarhi-Milo. 2021. "To Disclose or Deceive? Sharing Secret Information Between Aligned States." *International Security* 45(3): 122–161.
- Hafner-Burton, Emilie M., Edward D. Mansfield, and Jon C. W. Pevehouse. 2015. "Human Rights Institutions, Sovereignty Costs and Democratization." *British Journal of Political Science* 45(1): 1–27.
- Haginoya, Tohru. 1985. "The National System of Safeguards: Experience in Japan." *IAEA Bulletin*, 27(2): 19–22.
- Harries, Matthew Edward. 2014. *The Role of Article VI in Debates About the Nuclear Non-Proliferation Treaty*. Ph.D. diss., King's College London.
- Harvey, William S. "Strategies for Conducting Elite Interviews." *Qualitative Research* 11(4): 431–441.
- Helfer, Laurence R. 2005. "Exiting Treaties." *Virginia Law Review* 91(7): 1579–1648.
- Herz, Mônica, Layla Dawood, and Victor Coutinho Lage. 2016. "Brazilian Nuclear Policy During the Workers' Party Years." *Nonproliferation Review* 23(5–6): 559–573.
- Herzog, Stephen. 2017. "The Nuclear Test Ban: Technical Opportunities for the New Administration." *Arms Control Today* 47(1): 26–32.
- Herzog, Stephen. 2020. "The Nuclear Fuel Cycle and the Proliferation 'Danger Zone.'" *Journal for Peace and Nuclear Disarmament* 3(1): 60–86.
- Herzog, Stephen. 2021. "Unachievable Arms Control? Complex Entry-into Force Clauses and Multilateral Nuclear Treaties." Working paper, Yale University.
- Herzog, Stephen, Jiyoung Ko, and Do Young Lee. 2021. "Detonating the Bomb: Explaining the Pattern of Nuclear Tests." Working paper, Yale University and Bates College.
- Herzog, Stephen, and Jonathon Baron. 2017. "Public Support, Political Polarization, and the Nuclear-Test Ban: Evidence From a New US National Survey." *Nonproliferation Review* 24(3–4): 357–371.



- Herzog, Stephen, Jonathon Baron, and Rebecca Davis Gibbons. 2021. "Anti-Normative Messaging, Group Cues, and the Nuclear Ban Treaty." *Journal of Politics*. Forthcoming.
- Hill, Michael R. 1993. *Archival Strategies and Techniques*. Newbury Park, CA.: SAGE.
- Hoey, Fintan. 2015. *Satō, America and the Cold War: US–Japanese Relations, 1964–1972*. Basingstoke, UK: Palgrave Macmillan.
- Hoey, Fintan. 2017. "Non-Nuclear Japan? Satō, the NPT, and the US Nuclear Umbrella." In *Negotiating the Nuclear Non-Proliferation Treaty: Origins of the Nuclear Order*, 161–177. Edited by Roland Popp, Liviu Horowitz, and Andreas Wenger. London: Routledge.
- Horowitz, Liviu, and Robert Golan-Vilella. 2010a. "Boosting the CTBT's Prospects in the Middle East." *Bulletin of the Atomic Scientists* 66(2): 9–16.
- Horowitz, Liviu, and Robert Golan-Vilella. 2010b. "Comprehensive Nuclear-Test-Ban Treaty: How the Dominoes Might Fall After US Ratification." *Nonproliferation Review* 17(2): 235–257.
- Horowitz, Michael C., and Neil Narang. 2014. "Poor Man's Atomic Bomb? Exploring the Relationship Between 'Weapons of Mass Destruction.'" *Journal of Conflict Resolution* 58(3): 509–535.
- Hughes, Llewelyn. 2007. "Why Japan Will Not Go Nuclear (Yet): International and Domestic Constraints on the Nuclearization of Japan." *International Security* 31(4): 67–96.
- Hunt, Jonathan R. 2013. *Into the Bargain: The Triumph and Tragedy of Nuclear Internationalism During the Mid-Cold War, 1958–1970*. Ph.D. diss., University of Texas at Austin.
- Hyde, Susan D. 2011. "Catch Us If You Can: Election Monitoring and International Norm Diffusion." *American Journal of Political Science* 55(2): 356–369.
- Hymans, Jacques E. C. 2001. "Of Gauchos and Gringos: Why Argentina Never Wanted the Bomb, and Why the United States Thought it Did." *Security Studies* 10(3): 153–185.

- Hymans, Jacques E. C. 2006. *The Psychology of Nuclear Proliferation: Identity, Emotions, and Foreign Policy*. Cambridge: Cambridge University Press.
- Hymans, Jacques E. C. 2011. "Veto Players, Nuclear Energy, and Nonproliferation: Domestic Institutional Barriers to a Japanese Bomb." *International Security* 36(2): 154–189.
- Hymans, Jacques E. C. 2012. *Achieving Nuclear Ambitions: Scientists, Politicians, and Proliferation*. Cambridge: Cambridge University Press.
- Imai, Ryukichi. 1969. "The Non-Proliferation Treaty and Japan." *Bulletin of the Atomic Scientists* 25(5): 2–7.
- Imber, Mark F. 1982. "Verification: The Special Case of IAEA–NPT 'Special Inspections.'" *Contemporary Security Policy* 3(3): 57–75.
- Itoh, Mayumi. 2003. *The Hatoyama Dynasty: Japanese Political Leadership Through the Generations*. London: Palgrave Macmillan.
- Iwama, Yoko. 2019. "The Japanese Ministry of Foreign Affairs and the Decision to Join the Non-Proliferation Treaty." In *Joining the Non-Proliferation Treaty: Deterrence, Non-Proliferation and the American Alliance*, 151–171. Edited by John Baylis and Yoko Iwama. London: Routledge.
- Japan Atomic Energy Commission (JAEC). 1958. "Genshiryoku Hakusho" ["Atomic Energy White Paper"].  
<http://www.aec.go.jp/jicst/NC/about/hakusho/wp1956/index.htm>.
- Jervis, Robert. 1978. "Cooperation Under the Security Dilemma." *World Politics* 30(2): 167–214.
- Jervis, Robert. 1993. "Arms Control, Stability, and Causes of War." *Political Science Quarterly* 108(2): 239–253.
- Jesus, Diego Santos Vieira de. 2010. "The Brazilian Way: Negotiation and Symmetry in Brazil's Nuclear Policy." *Nonproliferation Review* 17(3): 551–567.
- Jo, Dong-Joon, and Erik Gartzke. 2007. "Determinants of Nuclear Weapons Proliferation." *Journal of Conflict Resolution* 51(1): 167–194.

- Johnson, Rebecca. 2009. *Unfinished Business: The Negotiation of the CTBT and the End of Nuclear Testing*. Geneva: United Nations Institute for Disarmament Research.
- Joshi, Sharad. 2000. "Israel's Nuclear Policy: A Cost-Benefit Analysis." *Strategic Analysis* 23(12): 2089–2110.
- Kahn, Herman. 1960. *On Thermonuclear War*. Princeton, NJ: Princeton University Press.
- Kahn, Herman. 1962. *Thinking About the Unthinkable*. New York: Horizon Press.
- Kahn, Herman. 1965. *On Escalation: Metaphors and Scenarios*. New York: Praeger.
- Kamel, Mohamed I. 1986. *The Camp David Accords: A Testimony*. London: Keagan.
- Karem, Mahmoud. 1988. *A Nuclear-Weapon-Free Zone in the Middle East*. New York: Greenwood Press.
- Karpin, Michael. 2006. *The Bomb in the Basement: How Israel Went Nuclear and What That Means for the World*. New York: Simon and Schuster.
- Kase, Yuri. 2001. "The Costs and Benefits of Japan's Nuclearization: An Insight Into the 1968/70 Internal Report." *Nonproliferation Review* 8(2): 55–68.
- Kassenova, Togzhan. 2014. *Brazil's Nuclear Kaleidoscope: An Evolving Identity*. Washington, DC: Carnegie Endowment for International Peace.
- Kassenova, Togzhan. 2016. "External Perceptions of Brazil's Nuclear Policy: Views From Argentina and the United States." *Nonproliferation Review* 23(5–6): 595–615.
- Kats, Gregory H. 1985. "Egypt." In *Non-Proliferation: The Why and the Wherefore*, 185–195. Edited by Jozef Goldblat. London: Taylor and Francis.
- Keck, Margaret E., and Kathryn Sikkink. 1998. *Activists Beyond Borders: Advocacy Networks in International Politics*. Ithaca, NY: Cornell University Press.

- Khan, Saira. 2002. *Nuclear Proliferation Dynamics in Protracted Conflict Regions: A Comparative Study of South Asia and the Middle East*. London: Routledge.
- Kissinger, Henry A. 1957. *Nuclear Weapons and Foreign Policy*. New York: Harper.
- Kissinger, Henry. 1994. *Diplomacy*. New York: Simon and Schuster.
- Kohl, Wilfrid L. 1965. "Nuclear Sharing in NATO and the Multilateral Force." *Political Science Quarterly* 80(1): 88–109.
- Koremenos, Barbara. 2005. "Contracting Around International Uncertainty." *American Political Science Review* 99(4): 549–565.
- Koremenos, Barbara, and Allison Nau. 2010. "Exit, No Exit," *Duke Journal of Comparative & International Law* 21: 81–120.
- Koremenos, Barbara, Charles Lipson, and Duncan Snidal. 2001. "Rational Design: Looking Back to Move Forward." *International Organization* 55(4): 1051–1082.
- Kourkouvelas, Lykourgos. 2012. "Denuclearization on NATO's Southern Front: Allied Reactions to Soviet Proposals, 1957–1963." *Journal of Cold War Studies* 14(4): 197–215.
- Kourkouvelas, Lykourgos. 2013. "Détente as a Strategy: Greece and the Communist World, 1974–9." *International History Review* 35(5): 1052–1067.
- Krasner, Stephen D. 1978. *Defending the National Interest: Raw Materials Investments and US Foreign Policy*. Princeton, NJ: Princeton University Press.
- Krasno, Jean. 1992. "Brazil, Argentina Make it Official." *Bulletin of the Atomic Scientists* 48(3): 10–11.
- Krasno, Jean. 1994. "Non-Proliferation: Brazil's Secret Nuclear Program." *Orbis* 38(3): 425–437.

- Kreps, Sarah E., Elizabeth N. Saunders, and Kenneth A. Schultz. 2018. "The Ratification Premium: Hawks, Doves, and Arms Control." *World Politics* 70(4): 479–514.
- Kroenig, Matthew. 2009. "Importing the Bomb: Sensitive Nuclear Assistance and Nuclear Proliferation." *Journal of Conflict Resolution* 53(2): 161–180.
- Kroenig, Matthew. 2010. *Exporting the Bomb: Technology Transfer and the Spread of Nuclear Weapons*. Ithaca, NY: Cornell University Press.
- Kubiak, Katarzyna. 2011. "CTBT Hold-Out States: Why Did 'The Longest Sought, Hardest Fought Prize in Arms Control History' Still Not Enter Into Force?" University of Hamburg, Institute for Peace Research and Security Policy. *Working Paper* 16. June.  
[http://edoc.vifapol.de/opus/volltexte/2011/3237/pdf/wp\\_16.pdf](http://edoc.vifapol.de/opus/volltexte/2011/3237/pdf/wp_16.pdf).
- Kurosaki, Akira. 2019. "Japan's Nuclear Disarmament and Non-Proliferation Diplomacy During the Cold War: The Myth and Reality of a Nuclear Bombed Country." In *Joining the Non-Proliferation Treaty: Deterrence, Non-Proliferation and the American Alliance*, 131–150. Edited by John Baylis and Yoko Iwama. London: Routledge.
- Kusunoki, Ayako. 2008. "The Sato Cabinet and the Making of Japan's Non-Nuclear Policy." *Journal of American–East Asian Relations* 15(1–2): 25–50.
- Kutchesfahani, Sara Z. 2013. *Politics and the Bomb: The Role of Experts in the Creation of Cooperative Nuclear Non-Proliferation Agreements*. London: Routledge.
- Kvale, Steinar. 1994. "Ten Standard Objections to Qualitative Research Interviews." *Journal of Phenomenological Psychology* 25(2): 147–173.
- Kydd, Andrew. 2000. "Trust, Reassurance, and Cooperation." *International Organization* 52(2): 325–357.
- Kyle, Keith. 1991. *Suez*. New York: St. Martin's Press.
- Lake, Anthony. 1994. "Confronting Backlash States." *Foreign Affairs* 73(2): 45–55.

- Lake, David A. 2011. *Hierarchy in International Relations*. Ithaca, NY: Cornell University Press.
- Lanoszka, Alexander. 2014. *Protection States Trust? Major Power Patronage, Nuclear Behavior, and Alliance Dynamics*. Ph.D. diss., Princeton University.
- Lanoszka, Alexander, 2018a. *Atomic Assurance: The Alliance Politics of Nuclear Proliferation*. Ithaca, NY: Cornell University Press.
- Lanoszka, Alexander. 2018b. "Nuclear Proliferation and Nonproliferation Among Soviet Allies." *Journal of Global Security Studies* 3(2): 217–233.
- Laron, Guy. 2017. *The Six Day War: The Breaking of the Middle East*. New Haven, CT: Yale University Press.
- Larsen, Jeffrey A., ed. 2002. *Arms Control: Cooperative Security in a Changing Environment*. Boulder, CO: Lynne Rienner.
- Larsen, Jeffrey A., and James J. Wirtz, eds. 2009. *Arms Control and Cooperative Security*. Boulder, CO: Lynne Rienner.
- Lavoy, Peter R. 1993. "Nuclear Myths and the Causes of Nuclear Proliferation." *Security Studies* 2(3–4): 192–212.
- Leech, Beth. 2002. "Asking Questions: Techniques for Semi-Structured Interviews," *PS: Political Science & Politics* 35(4): 665–668.
- Levine, Robert M. 1998. *Father of the Poor? Vargas and His Era*. Cambridge: Cambridge University Press.
- Lieber, Keir A., and Daryl G. Press. 2006. "The End of MAD? The Nuclear Dimension of U.S. Primacy." *International Security* 30(4): 7–44.
- Lieber, Keir A., and Daryl G. Press. 2009. "The Nukes We Need: Preserving the American Deterrent." *Foreign Affairs* 88(6): 39–51.
- Lieber, Keir A., and Daryl G. Press. 2017. "The New Era of Counterforce: Technological Change and the Future of Nuclear Deterrence." *International Security* 41(4): 9–49.

- Lima da Silva, Saint-Clair. 2019. "Beyond Samba and Soccer: Why Brazil Ventured a Nuclear Program." *Space & Defense* 11(1): 43–59.
- Litwak, Robert S. 2000. *Rogue States and U.S. Foreign Policy: Containment After the Cold War*. Washington, DC: Woodrow Wilson Center Press.
- Litwak, Robert S. 2007. *Regime Change: U.S. Strategy Through the Prism of 9/11*. Washington, DC: Woodrow Wilson Center Press.
- Lowrance, William W. 1976. "Nuclear Futures for Sale: To Brazil from West Germany, 1975." *International Security* 1(2): 147–166.
- Mackby, Jenifer. 2016. "Still Seeking, Still Fighting." *Nonproliferation Review* 23(3–4): 261–286.
- Mallea, Rodrigo, Matias Spektor, and Nicholas J. Wheeler, eds. 2015. *The Origins of Nuclear Cooperation: A Critical Oral History of Argentina and Brazil*. Washington, DC: Woodrow Wilson Center.
- Manwaring, Max G. 1984. "Nuclear Power in Brazil." *Parameters* 14(4): 40–46.
- Maoz, Zeev, and Ben D. Mor. 1996. "Enduring Rivalries: The Early Years." *International Political Science Review* 17(2): 141–160.
- Martin, Lisa L. 2005. "The President and International Commitments: Treaties as Signaling Devices." *Presidential Studies Quarterly* 35(3): 440–465.
- Mason, David S. 1982. "Romanian Autonomy and Arms Control Policies." *Contemporary Security Policy* 3(1): 13–36.
- Maurer, John D. 2018. "The Purposes of Arms Control." *Texas National Security Review* 2(1): 9–18.
- Mavrodin, Corina. 2020. "Denuclearisation and Regional Cooperation: Romania's Tactical Approaches to Escaping Bloc Rigidities." In *Margins for Manoeuvre in Cold War Europe: The Influence of Smaller Powers*, 187–204. Edited by Laurien Crump and Susanna Erlandsson. London: Routledge.
- McDade, Paul V. 1985. "The Interim Obligation Between Signature and Ratification of a Treaty: Issues Raised by the Recent Actions of Signatories to the Law

- of the Sea Convention With Respect to the Mining of the Deep Seabed.” *Netherlands International Law Review* 32(1): 5–47.
- McGrath, Kaegan. 2009. “Verifiability, Reliability, and National Security: The Case for U.S. Ratification of the CTBT.” *Nonproliferation Review* 16(3): 407–433.
- Mearsheimer, John J. 1990. “Back to the Future: Instability in Europe After the Cold War.” *International Security* 15(1): 5–56.
- Mearsheimer, John J. 2001. *The Tragedy of Great Power Politics*. New York: W. W. Norton.
- Mearsheimer, John J., and Stephen M. Walt. 2013. “Leaving Theory Behind: Why Simplistic Hypothesis Testing is Bad for International Relations.” *European Journal of International Relations* 19(3): 427–457.
- Mekata, Motoko. 2018. “How Transnational Civil Society Realized the Ban Treaty: An Interview with Beatrice Fihn.” *Journal for Peace and Nuclear Disarmament* 1(1): 79–92.
- Melamud, Mordechai, Paul Meerts, and I. William Zartman, eds. 2014. *Banning the Bang or the Bomb: Negotiating the Nuclear Test Ban Regime*. Cambridge: Cambridge University Press.
- Merrill, Karen R. 2007. *The Oil Crisis of 1973–1974: A Brief History With Documents*. Boston: Bedford/St. Martin’s.
- Meyer, Stephen M. 1984. *The Dynamics of Nuclear Proliferation*. Chicago: University of Chicago Press.
- Miller, Nicholas L. 2014. “The Secret Success of Nonproliferation Sanctions.” *International Organization* 68(4): 913–944.
- Miller, Nicholas L. 2017. “Why Nuclear Energy Programs Rarely Lead to Proliferation.” *International Security* 42(2): 40–77.
- Miller, Nicholas L. 2018. *Stopping the Bomb: The Sources of US Nonproliferation Policy, 1945–1968*. Ithaca, NY: Cornell University Press.



- Miller, Steven E., and Scott D. Sagan. 2009. "Nuclear Power Without Nuclear Proliferation?" *Dædalus* 138(4): 7–18.
- Mochizuki, Mike M. 2007. "Japan Tests the Nuclear Taboo." *Nonproliferation Review* 14(2): 303–328.
- Monteiro, Nuno P. 2011/2012. "Unrest Assured: Why Unipolarity is Not Peaceful." *International Security* 36(3): 9–40.
- Monteiro, Nuno P. 2014. *Theory of Unipolar Politics*. Cambridge: Cambridge University Press.
- Monteiro, Nuno P., and Alexandre Debs. 2014. "The Strategic Logic of Nuclear Proliferation." *International Security* 39(2): 7–51.
- Monteiro de Matos, Mariana. 2020. "The Unclassical Match Between Brazil and Argentina: Past and Present of the Nuclear-Weapon-Free Zone in Latin America and the Caribbean." In *Nuclear Non-Proliferation in International Law – Volume V: Legal Challenges for Nuclear Security and Deterrence*, 151–168. Edited by Jonathan L. Black-Branch and Dieter Fleck. The Hague: Springer.
- Montgomery, Alexander H. 2013. "Stop Helping me: When Nuclear Assistance Impedes Nuclear Programs." In *The Nuclear Renaissance and International Security*, 177–202. Edited by Adam N. Stulberg and Matthew Fuhrmann. Stanford, CA: Stanford University Press.
- Moody, R. Adam. 1996. "Report: Reexamining Brain Drain from the Former Soviet Union." *Nonproliferation Review* 3(3): 92–97.
- Morris, Benny. 2008. *1948: A History of the First Arab–Israeli War*. New Haven, CT: Yale University Press.
- Mosley, Layna, ed. 2013. *Interview Research in Political Science*. Ithaca, NY: Cornell University Press.
- Müller, Harald, and Andreas Schmidt. 2010. "The Little Known Story of De-Proliferation: Why States Give up Nuclear Weapons Activities." In *Forecasting Nuclear Proliferation in the 21st Century: Volume 1 The Role*

- of *Theory*, 124–158. Edited by William C. Potter and Gaukhar Mukhatzhanova. Stanford, CA: Stanford University Press.
- Munteanu, Mircea. 2009. “Communication Breakdown? Romania and the Sino–American Rapprochement.” *Diplomatic History* 33(4): 615–631.
- Munteanu, Mircea. 2010. “When the Levee Breaks: The Impact of the Sino–Soviet Split and the Invasion of Czechoslovakia on Romanian–Soviet Relations, 1967–1970.” *Journal of Cold War Studies* 12(1): 43–61.
- Musto, Ryan A. 2018. “‘A Desire so Close to the Hearts of all Latin Americans’: Utopian Ideals and Imperfections Behind Latin America’s Nuclear Weapon Free Zone.” *Bulletin of Latin American Research* 37(2): 160–174.
- Myers, David J. 1984. “Brazil: Reluctant Pursuit of the Nuclear Option.” *Orbis* 27(4): 881–911.
- Nakatani, Hiroshi. 2019. *The Development of US Nuclear Deterrence Over Japan: A Study of Invisible Deterrence Between 1945 and 1970*. Ph.D. diss., University of Reading.
- Narang, Vipin. 2014. *Nuclear Strategy in the Modern Era: Regional Powers and International Conflict*. Princeton, NJ: Princeton University Press.
- Narang, Vipin. 2016/2017. “Strategies of Nuclear Proliferation: How States Pursue the Bomb.” *International Security* 41(3): 110–150.
- Nascimento Plum, Mariana Oliveira do, and Carlos Augusto Rollemberg de Resende. 2016. “The ABACC Experience: Continuity and Credibility in the Nuclear Programs of Brazil and Argentina.” *Nonproliferation Review* 23(5–6): 575–593.
- Nashif, Taysir N. 1984. *Nuclear Warfare in the Middle East: Dimensions and Responsibilities*. Princeton, NJ: Kingston Press.
- Nichols, David A. 2012. *Eisenhower 1956: The President’s Year of Crisis – Suez and the Brink of War*. New York: Simon and Schuster.
- Nye Jr., Joseph S. 1988. “U.S.–Soviet Cooperation in a Nonproliferation Regime.” In *U.S.–Soviet Security Cooperation: Achievements, Failures, Lessons*,

- 336–352. Edited by Alexander L. George, Philip J. Farley, and Alexander Dallin. New York: Oxford University Press.
- Nye Jr., Joseph S. 1992. “New Approaches to Nuclear Proliferation Policy.” *Science* 257(5061): 1293–1297.
- Oelrich, Ivan. 1990. “The Changing Rules of Arms Control Verification: Confidence is Still Possible.” *International Security* 14(4): 176–184.
- Ogilvie-White, Tanya. 1996. “Is There a Theory of Nuclear Proliferation? An Analysis of the Contemporary Debate.” *Nonproliferation Review* 4(1): 43–60.
- Opriş, Petre 2012. “Romania and the Cuban Missile Crisis: Soviet Nuclear Warheads for Romania?” Woodrow Wilson Center, Cold War International History Project. *CWIHP Bulletin* 17/18: 514–521.
- Oren, Michael B. 2002. *Six Days of War: June 1967 and the Making of the Modern Middle East*. New York: Random House.
- Ota, Masakatsu. 2013. *Nichibei ‘Kakumitsuyaku’ No Zenbo [A Whole Picture of the US–Japan Nuclear Secret Deal]*. Tokyo: Chikuma Sensho.
- Ota, Masakatsu. 2018. “Conceptual Twist of Japanese Nuclear Policy: Its Ambivalence and Coherence Under the US Umbrella.” *Journal for Peace and Nuclear Disarmament* 1(1): 193–208.
- Owens, Lisa. 1995. “Confidence Building in Latin America: Nuclear Controls Between Brazil and Argentina.” In *Regional Confidence-Building in 1995: South Asia, the Middle East, and Latin America*. Edited by Jill R. Junnola and Michael Krepon. Stimson Center. Report 20. December. <https://www.stimson.org/wp-content/files/file-attachments/regional-confidence-building-1995.pdf>.
- Patti, Carlo. 2012. *Brazil in Global Nuclear Order*. Ph.D. diss., University of Florence.
- Patti, Carlo. 2015. “The Origins of the Brazilian Nuclear Programme, 1951–1955.” *Cold War History* 15(3): 353–373.

- Patti, Carlo. 2018. "The Forbidden Cooperation: South Africa–Brazil Nuclear Relations at the Turn of the 1970s." *Revista Brasileira de Política Internacional* 61(2): 1–17.
- Patti, Carlo, and Matias Spektor. 2020. "'We Are Not a Nonproliferation Agency': Henry Kissinger's Failed Attempt to Accommodate Nuclear Brazil, 1974–1977." *Journal of Cold War Studies* 22(2): 58–93.
- Patti, Carlo, and Rodrigo Mallea. 2018. "American Seeds of ABACC? Findley's Proposal to Create a Mutual Nuclear Inspections System Between Brazil and Argentina." *International History Review* 40(5): 996–1013.
- Paul, T. V. 2000. *Power Versus Prudence: Why Nations Forgo Nuclear Weapons*. Montreal: McGill–Queen's Press.
- Pecequillo, Cristina Soreanu, and Artur Cruz Bertolucci. 2019. "Comparative Nuclear Policy: A Case Study of U.S. Impact on India and Brazil Programs (1946–2018)." *Austral: Brazilian Journal of Strategy & International Relations* 8(16): 129–171.
- Pechlivanis, Paschalis. 2017. "Between Détente and Differentiation: Nixon's Visit to Bucharest in August 1969." *Cold War History* 17(3): 241–258.
- Perle, Richard. 1987. "Reykjavik as a Watershed in U.S.–Soviet Arms Control." *International Security* 12(1): 175–178.
- Persbo, Andreas. 2016. "Compliance Science: The CTBT's Global Verification System." *Nonproliferation Review* 23(3–4): 317–328.
- Pieragostini, Karl. 1986. "Arms Control Verification: Cooperating to Reduce Uncertainty." *Journal of Conflict Resolution* 30(3): 420–444.
- Popp, Roland. 2017. "The Long Road to the NPT: From Superpower Collusion to Global Compromise." In *Negotiating the Nuclear Non-Proliferation Treaty: Origins of the Nuclear Order*, 9–35. Edited by Roland Popp, Liviu Horovitz, and Andreas Wenger. London: Routledge.
- Popp, Roland, Liviu Horovitz, and Andreas Wenger, eds. 2017. *Negotiating the Nuclear Non-Proliferation Treaty: Origins of the Nuclear Order*. Oxford: Routledge.

- Potash, Robert A. 1996. *The Army & Politics in Argentina, 1962–1973: From Frondizi's Fall to the Peronist Restoration*, Vol. 3. Stanford, CA: Stanford University Press.
- Potter, William C. 1992. "Exports and Experts: Proliferation Risks from the New Commonwealth." *Arms Control Today* 22(1): 32–37.
- Potter, William C. 2017. "Disarmament Diplomacy and the Nuclear Ban Treaty." *Survival* 59(4): 75–108.
- Powell, Robert. 2003. "Nuclear Deterrence Theory, Nuclear Proliferation, and National Missile Defense." *International Security* 27(4): 86–118.
- Quandt, William B. 2015. *Camp David: Peacemaking and Politics*. Washington, DC: Brookings Institution Press.
- Quester, George H. 1970. "Japan and the Nuclear Non-Proliferation Treaty." *Asian Survey*, 10(9): 765–778.
- Quester, George H. 1973. *The Politics of Nuclear Proliferation*. Baltimore: Johns Hopkins University Press.
- Quester, George H. 1981. "Preventing Proliferation: The Impact on International Politics." *International Organization* 35(1): 213–240.
- Raas, Whitney, and Austin Long. 2007. "Osirak Redux? Assessing Israeli Capabilities to Destroy Iranian Nuclear Facilities." *International Security* 31(4): 7–33.
- Rabinovich, Abraham. 2007. *The Yom Kippur War: The Epic Encounter that Transformed the Middle East*. New York: Schocken.
- Rabinowitz, Or. 2014. *Bargaining on Nuclear Tests: Washington and its Cold War Deals*. Oxford: Oxford University Press.
- Rabinowitz, Or. 2018 "Signed, Sealed but Never Delivered: Why Israel did not Receive Nixon's Promised Nuclear Power Plants." *International History Review* 40(5): 1014–1033.

- Ramaker, Jaap, Peter D. Marshall, Robert Geil, and Jenifer Mackby. 2003. *The Final Test: A History of the Comprehensive Nuclear-Test-Ban Treaty Negotiations*. Vienna: Provisional Technical Secretariat, Preparatory Commission for the Comprehensive Nuclear-Test-Ban Treaty Organization.
- Reddie, Andrew W. 2019. *Governing Insecurity: Institutional Design, Compliance, and Arms Control*. Ph.D. diss., University of California, Berkeley.
- Redick, John R. 1995a. "Argentina–Brazil Nuclear Non-Proliferation Initiatives." In *The Future of the Non-Proliferation Treaty*, 181–194. Edited by John Simpson and Darryl Howlett. London: St. Martin's Press.
- Redick, John R. 1995b. "Nuclear Illusions: Argentina and Brazil." Stimson Center. *Occasional Paper* 25. December. <https://www.stimson.org/wp-content/files/file-attachments/Occasional%20Paper%20No.%2025%20December%201995.pdf>.
- Redick, John R. 1995c. "The NPT, the Treaty of Tlatelolco, and the Future of Nonproliferation." In *1995: A New Beginning for the NPT*, 163–177. Edited by Joseph F. Pilat and Robert E. Pendley. New York: Springer.
- Redick, John R., Julio C. Carasales, and Paulo S. Wrobel. 1995. "Nuclear Rapprochement: Argentina, Brazil, and the Nonproliferation Regime." *Washington Quarterly* 18(1): 107–122.
- Reiss, Mitchell. 1995. *Bridled Ambition: Why Countries Constrain Their Nuclear Capabilities*. Washington, DC: Woodrow Wilson Center Press.
- Renshon, Jonathan. 2017. *Fighting for Status: Hierarchy and Conflict in World Politics*. Princeton, NJ: Princeton University Press.
- Retegan, Mihai. *In the Shadow of the Prague Spring: Romanian Foreign Policy and the Crisis in Czechoslovakia, 1968*. Iași, Romania: Center for Romanian Studies, 2000.
- Rezk, Dina. 2017. *Arab World and Western Intelligence: Analysing the Middle East, 1956–1981*. Edinburgh: Edinburgh University Press.

- Richards, Paul G., and John Zavales. "Seismological Methods for Monitoring a CTBT: The Technical Issues Arising in Early Negotiations." In *Monitoring a Comprehensive Test Ban Treaty*, 53–81. Edited by Eystein S. Husebye and Anton M. Dainty. Dordrecht, Netherlands: Springer.
- Ritchie, Nick, and Kjølsv Egeland. 2018. "The Diplomacy of Resistance: Power, Hegemony and Nuclear Disarmament." *Global Change, Peace & Security* 30(2): 121–141.
- Rodríguez Aquino, J. Luís. 2020. "Limitar las Armas. Sobre la Formulación de Normas Internacionales en Contra de la Proliferación Nuclear de América Latina" ["Limiting Weapons: Crafting International Nuclear Nonproliferation Standards from Latin America"]. *Foro Internacional* 60(1): 97–137.
- Rosenbaum, H. Jon, Glenn M. Cooper. 1970. "Brazil and the Nuclear Non-Proliferation Treaty." *International Affairs* 46(1): 74–90.
- Rublee, Maria Rost. 2006. "Egypt's Nuclear Weapons Program: Lessons Learned." *Nonproliferation Review* 13(3): 555–567.
- Rublee, Maria Rost. 2009. *Nonproliferation Norms: Why States Choose Nuclear Restraint*. Athens, GA: University of Georgia Press.
- Rublee, Maria Rost. 2010. "The Nuclear Threshold States: Challenges and Opportunities Posed by Brazil and Japan." *Nonproliferation Review* 17(1): 49–70.
- Ryckman, Kirssa Cline. 2016. "Ratification as Accommodation? Domestic Dissent and Human Rights Treaties." *Journal of Peace Research* 53(4): 582–596.
- Sá, Andrea de. 2015. "Brazil's Nuclear Submarine Program: A Historical Perspective." *Nonproliferation Review* 22(1): 3–25.
- Sagan, Scott D. 1996/1997. "Why Do States Build Nuclear Weapons? Three Models in Search of a Bomb." *International Security* 21(3): 54–86.
- Sagan, Scott D. 2009. "Shared Responsibilities for Nuclear Disarmament." *Dædalus* 138(4): 157–168.

- Sagan, Scott D. 2010. "Nuclear Power, Nuclear Proliferation and the NPT." Paper presented to the American Political Science Association Annual Meeting. Washington, DC.  
[https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1642168](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1642168).
- Sagan, Scott D. 2011. "The Causes of Nuclear Weapons Proliferation." *Annual Review of Political Science* 14: 225–244.
- Schaller, Michael. 1985. *The American Occupation of Japan: The Origins of the Cold War in Asia*. Oxford: Oxford University Press.
- Schaller, Michael. 1997. *Altered States: The United States and Japan Since the Occupation*. Oxford: Oxford University Press.
- Schelling, Thomas C. 1960. *The Strategy of Conflict*. Cambridge, MA: Harvard University Press.
- Schelling, Thomas C. 1966. *Arms and Influence*. New Haven, CT: Yale University Press.
- Schelling, Thomas C. 1985. "What Went Wrong With Arms Control?" *Foreign Affairs* 64(2): 219–233.
- Schelling, Thomas C., and Morton H. Halperin. 1961. *Strategy and Arms Control*. New York: Twentieth Century Fund.
- Schlesinger, James. 1986. "Reykjavik and Revelations: A Turn of the Tide?" *Foreign Affairs* 65(3): 426–446.
- Schöppner, Michael, Wolfango Plastino, Pavel P. Povinec, Gerhard Wotawa, Francesco Bella, Antonio Budano, Mario De Vincenzi, and Federico Ruggieri. 2012. "Estimation of the Time-Dependent Radioactive Source-Term from the Fukushima Nuclear Power Plant Accident Using Atmospheric Transport Modelling." *Journal of Environmental Radioactivity* 114: 10–14.
- Scott, James C. 1998. *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed*. New Haven, CT: Yale University Press.
- Sechser, Todd S., and Matthew Fuhrmann. 2013. "Crisis Bargaining and Nuclear Blackmail." *International Organization* 67(1): 173–195.



- Sechser, Todd S., and Matthew Fuhrmann. 2017. *Nuclear Weapons and Coercive Diplomacy*. Cambridge: Cambridge University Press.
- Selim, Mohammad El-Sayed. 1982. "Egypt." In *Nuclear Power in Developing Countries: An Analysis of Decision Making*, 135–159. Edited by James E. Katz and Onkar S. Marwah. Lanham, MD: Lexington Books.
- Selim, Mohammad El-Sayed. 1996. "Egypt and the Middle Eastern Nuclear Issue." *Strategic Analysis* 15(1): 1381–1398.
- Selvage, Douglas. 2001. "The Warsaw Pact and Nuclear Nonproliferation, 1963–1965." Woodrow Wilson Center, Cold War International History Project. *Working Paper* 32.  
[https://www.wilsoncenter.org/sites/default/files/media/documents/publication/working\\_paper\\_no.32\\_repaired.pdf](https://www.wilsoncenter.org/sites/default/files/media/documents/publication/working_paper_no.32_repaired.pdf).
- Shaker, Mohamed. 1980a. *The Non-Proliferation Treaty: Origins and Implementation, 1959–1979, Vol 1*. London: Oceana.
- Shaker, Mohamed. 1980b. *The Non-Proliferation Treaty: Origins and Implementation, 1959–1979, Vol 2*. London: Oceana.
- Shaker, Mohamed. 1980c. *The Non-Proliferation Treaty: Origins and Implementation, 1959–1979, Vol 3*. London: Oceana.
- Shaker, Mohamed I. 1995. "The Middle East, Israel and Iraq." In *The Future of the Non-Proliferation Treaty*, 162–171. Edited by John Simpson and Darryl Howlett. London: St. Martin's Press.
- Shikaki, Khalil. 1985. "The Nuclearization Debates: The Cases of Israel and Egypt." *Journal of Palestinian Studies* 14(4): 77–91.
- Shinobu, Takashi. 2014. *Nichibei Anpo Joyaku to Jizen Kyogi Seido [The US–Japan Security Treaty and Prior Consultation System]*. Tokyo: Kobundo.
- Silva, Antônio Ruy de Almeida, and José Augusto Abreu de Moura. 2016. "The Brazilian Navy's Nuclear-Powered Submarine Program." *Nonproliferation Review* 23(5–6): 617–633.

- Singh, Sonali, and Christopher R. Way. 2004. "The Correlates of Nuclear Proliferation: A Quantitative Test." *Journal of Conflict Resolution* 48(6): 859–885.
- Skidmore, Thomas E. 1990. *The Politics of Military Rule in Brazil, 1964–1985*. New York: Oxford University Press.
- Solingen, Etel. 2007. *Nuclear Logics: Contrasting Paths in East Asia and the Middle East*. Princeton, NJ: Princeton University Press.
- Solingen, Etel, 2010. "The Perils of Prediction: Japan's Once and Future Nuclear Status." In *Forecasting Nuclear Proliferation in the 21st Century: Volume 2 A Comparative Perspective*, 131–157. Edited by William C. Potter and Gaukhar Mukhatzhanova. Stanford, CA: Stanford University Press.
- Sotomayor, Arturo C. 2013. "Brazil and Mexico in the Nonproliferation Regime: Common Structures and Divergent Trajectories in Latin America." *Nonproliferation Review* 20(1): 81–105.
- Spaniel, William. 2019. *Bargaining Over the Bomb: The Successes and Failures of Nuclear Negotiations*. Cambridge: Cambridge University Press.
- Spektor, Matias. 2016. "The Evolution of Brazil's Nuclear Intentions." *Nonproliferation Review* 23(5–6): 635–652.
- Spektor, Matias. 2019. "Without Reversal: Brazil as a Latent Nuclear State." In *Nuclear Latency and Hedging: Concepts, History, and Issues*, 175–200. Edited by Joseph F. Pilat. Washington, DC: Woodrow Wilson Center.
- Spektor, Matias, Togzhan Kassenova, and Lucas Perez Florentino. 2019. "Brazil's Nuclear Posture Under Bolsonaro." *Arms Control Today* 49(7): 12–17.
- Stanciu, Cezar. 2013a. "A Rebirth of Diplomacy: The Foreign Policy of Communist Romania Between Subordination and Autonomy, 1948–1962." *Diplomacy & Statecraft* 24(2): 253–272.
- Stanciu, Cezar. 2013b. "Crisis Management in the Communist bloc: Romania's Policy Towards the USSR in the Aftermath of the Prague Spring." *Cold War History* 13(3): 353–372.

- Stanley, Ruth. 1992. "Co-operation and Control: The New Approach to Nuclear Non-Proliferation in Argentina and Brazil." *Contemporary Security Policy* 13(2): 191–213.
- Steigerwald, David. 1994. *Wilsonian Idealism in America*. Ithaca: Cornell University Press.
- Stein, Janice Gross. 1996. "Deterrence and Learning in an Enduring Rivalry: Egypt and Israel, 1948–73." *Security Studies* 6(1): 104–152.
- Stephens, Robert. 1971. *Nasser: A Political Biography*. London: Allen Lane.
- Stoll, Richard J. 1996. "World Production of Latent Nuclear Capacity." Dataset, Rice University.  
<http://es.rice.edu/projects/Poli378/Nuclear/Proliferation/proliferation.html>.
- Sugita, Yoneyuki. 2003. *Pitfall Or Panacea: The Irony of US Power in Occupied Japan 1945–1952*. Hove, UK: Psychology Press.
- Suppo, Hugo Rogello, and Leandro Gavião. 2020. "The Ambiguities of Brazil in the Nuclear Area and the Argentine 'Strategic Patience' (2002–2010)." *História (São Paulo)* 39: 1–25.
- Swango, Dane. 2009. *The Nuclear Nonproliferation Treaty: Constrainer, Screener, or Enabler?* Ph.D. diss. University of California, Los Angeles.
- Swango, Dane. 2014. "The United States and the Role of Nuclear Cooperation and Assistance in the Design of the Non-Proliferation Treaty." *International History Review* 36(2): 210–229.
- Takubo, Masafumi. 2008. "Wake Up, Stop Dreaming: Reassessing Japan's Reprocessing Program." *Nonproliferation Review* 15(1): 71–94.
- Talmadge, Caitlin. 2017. "Would China Go Nuclear? Assessing the Risk of Chinese Nuclear Escalation in a Conventional War with the United States." *International Security* 41(4): 50–92.
- Tanaka, Yasumasa. 1970. "Japanese Attitudes Toward Nuclear Arms." *Public Opinion Quarterly* 34(1): 26–42.

- Tannenwald, Nina. 1999. "The Nuclear Taboo: The United States and the Normative Basis of Nuclear Non-Use." *International Organization* 53(3): 433–468.
- Tannenwald, Nina. 2007. *The Nuclear Taboo: The United States and the Non-Use of Nuclear Weapons Since 1945*. Cambridge: Cambridge University Press.
- Tansey, Oisín. 2007. "Process Tracing and Elite Interviewing: A Case for Non-Probability Sampling." *PS: Political Science & Politics* 40(4): 765–772.
- Tatsumi, Yuki. 2012. "Maintaining Japan's Non-Nuclear Identity: The Role of U.S. Security Assurances." In *Security Assurances and Nuclear Nonproliferation*, 137–161. Edited by Jeffrey Knopf. Stanford, CA: Stanford University Press.
- Taubman, William. 2003. *Khrushchev: The Man and His Era*. New York: W. W. Norton.
- Thayer, Bradley A. 1995. "The Causes of Nuclear Proliferation and the Utility of the Nuclear Non-Proliferation Regime." *Security Studies* 4(3): 463–519.
- Thurlow, Setsuko. 2020. "Setsuko Thurlow Remembers the Hiroshima Bombing." *Arms Control Today* 50(6): 20–22.
- Timerbaev, Roland M. 1999. *Rossiia i ĭadernoe Nerasprostranenie: 1945–1968* [*Russia and Nuclear Nonproliferation: 1945–1968*]. Moscow: Nauka.
- Toader, Iulian. 2016. "'Mystery Revealed?' The Mănescu–Rusk Conversation of 4 October 1963 and the Beginning of the Romanian–American 'Special Relationship.'" *Arhivele Totalitarismului* 24(3–4): 237–253.
- Tomonaga, Masao. 2019. "The Atomic Bombings of Hiroshima and Nagasaki: A Summary of the Human Consequences, 1945–2018, and Lessons for *Homo Sapiens* to End the Nuclear Weapon Age." *Journal for Peace and Nuclear Disarmament* 2(2): 491–517.
- Trager, Robert F. 2010. "Diplomatic Calculus in Anarchy: How Communication Matters." *American Political Science Review* 104(2): 347–368.

- Trager, Robert F. 2017. *Diplomacy: Communication and the Origins of International Order*. Cambridge: Cambridge University Press.
- Ulam, Adam B. 1976. "Détente Under Soviet Eyes." *Foreign Policy* 24: 145–159.
- van Sant, John, Peter Mauch, and Yoneyuki Sugita. 2007. *Historical Dictionary of United States–Japan Relations*. Lanham, MD: Scarecrow Press.
- Verona, Sergiu. 1992. *Military Occupation and Diplomacy. Soviet Troops in Romania 1944–1958*. Durham, NC: Duke University Press.
- Volpe, Tristan A. 2017. "Atomic Leverage: Compellence with Nuclear Latency." *Security Studies* 26(3): 517–544.
- Vreeland, James Raymond. 2008. "Political Institutions and Human Rights: Why Dictatorships Enter Into the United Nations Convention Against Torture." *International Organization* 62(1): 65–101.
- Walker, William. 1992. "Nuclear Weapons and the Former Soviet Republics." *International Affairs* 68(2): 255–277.
- Walsh, James J. 2001. *Bombs Unbuilt: Power, Ideas, and Institutions in International Politics*. Ph.D. diss., Massachusetts Institute of Technology.
- Walt, Stephen M. 2010. "A Renaissance in Nuclear Security Studies?" *Foreign Policy*. <http://foreignpolicy.com/2010/01/21/a-renaissance-in-nuclear-security-studies/>.
- Waltz, Kenneth N. 1979. *Theory of International Politics*. Reading, MA: Addison-Wesley.
- Waltz, Kenneth N. 1981. "The Spread of Nuclear Weapons: More may be Better." *Adelphi Papers* 21(171).
- Watanabe, Takaaki, and Takeo Murase. 1977. "Uranium Enrichment by Centrifuge in Japan." Paper presented to the International Conference on Nuclear Power and Its Fuel Cycle. Salzburg. IAEA-CN-36/160. <https://inis.iaea.org/collection/NCLCollectionStore/Public/08/303/8303324.pdf?r=1>.

- Watts, Larry. 2013. "Romania Security Policy and the Cuban Missile Crisis." Woodrow Wilson Center, Cold War International History Project. *Cold War International History Project e-Dossier* 38.  
<https://www.wilsoncenter.org/publication/romania-security-policy-and-the-cuban-missile-crisis>.
- Way, Cristopher, and Karthika Sasikumar. 2004. "Leaders and Laggards: When and Why Do Countries Sign the NPT?" University of Montreal/McGill University, Research Group in International Security. *Working Paper* 16.
- Whitlark, Rachel Elizabeth. 2017. "Nuclear Beliefs: A Leader-Focused Theory of Counter-Proliferation." *Security Studies* 26(4): 545–574.
- Wohlstetter, Albert. 1958. "The Delicate Balance of Terror." *Foreign Affairs* 37(2): 211–234.
- Wrobel, Paulo S. 1996. "Brazil and the NPT: Resistance to Change?" *Security Dialogue* 27(3): 337–347.
- Yamashita, Kiyonobu. 2015. "History of Nuclear Technology Development in Japan." *AIP Conference Proceedings* 1659(020003).
- Yamazaki, Masakatsu. 2001. "Dainiji Sekai Taisen ji no Nihon no Genbaku Kaihatsu" ["Japan's Nuclear Weapon Development at the Time of the Second World War"]. *Nihon Butsurigakkaishi* 56(8): 584–90.
- Yoshida, Shingo. 2019. "In the Shadow of China's Bomb: Nuclear Consultation, Commitment Reconfirmation, and Missile Defence in the US–Japan Alliance, 1962–1968." In *Joining the Non-Proliferation Treaty: Deterrence, Non-Proliferation and the American Alliance*, 172–195. Edited by John Baylis and Yoko Iwama. London: Routledge.
- Zaborsky, Victor. 2003. "The Brazilian Export Control System." *Nonproliferation Review* 10(2): 123–135.
- Zagorski, Andrei. 1992. "Post-Soviet Nuclear Proliferation Risks." *Security Dialogue* 23(3): 27–39.

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